

To Captain Jordan, Pioneer and Promoter  
of the entire naval medical  
supply service in World War II.  
Kent Melhorn

# **HISTORICAL NARRATIVE**

**OF THE**

**U.S. NAVAL MEDICAL SUPPLY DEPOT**

**AND**

**MATERIEL DIVISION.**

**BUREAU OF MEDICINE AND SURGERY**

**BROOKLYN, NEW YORK**

**FROM THEIR INCEPTION**

**TO JULY 1, 1945**





## FOREWORD

This historical narrative was prepared in response to the directive, A12-1(1), dated June 22, 1945, from the Commandant, Third Naval District, to naval establishments within his district.

Sufficient data are included on organization, function and growth of work load to present the situations and problems, together with their resolution, of World War II as relates to U. S. Naval Medical Department's supplies and equipment.

The frequent revisions of the basic organizations of the supply facilities of the Medical Department are to a large extent the reflection of management studies and surveys made by civilian and naval consultants from the Office of the Secretary of the Navy.

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I. U.S. NAVAL MEDICAL SUPPLY DEPOT, BROOKLYN, NEW YORK.

1. History

(a) Precursor. The forerunner of the U. S. Naval Medical Supply Depot, Brooklyn, New York began operating about the year 1850 in a room on the second floor of the Brooklyn Naval Hospital - a room previously assigned for the care of patients with "contagious" diseases. Here, with limited equipment, the manufacture of a few medicines employed in the hospital was begun. Despite the lack of sufficient apparatus, enough progress was made to warrant an expansion of the project to permit the manufacture of medical preparations for additional hospitals established to meet the needs of the Nation's growing Navy.

(b) Establishment and Discontinuance of Pharmaceutical Laboratory. In 1853 an act of Congress authorized the Navy Department "to erect and equip a laboratory in which medicines should be made for the use of the Medical Department of the Navy." This laboratory was built on the land tract of the Brooklyn Naval Hospital and placed in charge of Surgeon Benjamin F. Bache, U.S.N., ably assisted by Passed Assistant Surgeon E. R. Squibb, U.S.N., who later resigned from the Navy and established the well known pharmaceutical firm of E. R. Squibb and Sons. Surgeon Bache remained in charge of the laboratory for 18 consecutive years.

In an article published in the July 1917 issue of the Naval Medical Bulletin, Medical Inspector R. P. Crandall quotes from the diary of Doctor Squibb a discouraging experience in making phosphoric acid and ammonia phosphate: "On Thursday I had the misfortune to see a 3-gallon retort break on the sand bath, with almost 2 pounds of phosphorous and 12 of acid, and the whole of it with 2 days labor lost; the house nearly set on fire, and I nearly suffocated with fumes."

By perseverance and skill, success came to the earnest group of laboratory workers. Because of their pure quality the medicines prepared by them from crude drugs were in increasing demand.

It was in the Naval Laboratory about this time that experiments were first performed in the production of ether by steam heat thereby lessening to a large extent the danger involved by other methods. In a communication published in 1856 in the American Journal of Pharmacy, Doctor Squibb described the apparatus and technic employed in the new and safer procedure.

Shortly after the close of the Civil War improved methods of production brought about a material reduction in the cost of medicines. Accordingly, the laboratory ceased making pharmaceutical preparations. However, it did continue to manufacture and equip boat boxes, fracture boxes, medicine chests, packing cases, etc.

(c) The Naval Laboratory and Department of Instruction. In 1893 upon the recommendation of the Surgeon General, Medical Director J. Rufus Tryon, U.S.N., a teaching department was added to the Naval Laboratory - the name of which was changed to The Naval Laboratory and Department of Instruction. Its staff was comprised of the officer personnel of the laboratory and members of the Naval Medical Examining Board. The curriculum was planned to meet the needs of Assistant Surgeons. The examinations for commissions and promotions in the Naval Medical Corps were conducted in the laboratory building. In 1902 the Department of Instruction was transferred to Washington, D. C., where it became the nucleus of the newly created Naval Medical School.

(d) Establishment of the U. S. Naval Medical Supply Depot, Brooklyn. On May 26, 1905, the Secretary of the Navy authorized the construction of a new building on the grounds of the Brooklyn Naval Hospital and directed that it be designated: "The United States Naval Medical Supply Depot." Constructed of stone blocks, a two story building was completed in 1906 and provided a gross floor space of 37,000 square feet. The building was equipped with one freight elevator of the pull cable type with a capacity of 1,500 pounds. It is reported that, when overloaded, the elevator often landed in the basement with scattered freight and a frightened operator. In addition to the usual warehousing facilities, a physical and chemical laboratory was provided.

The basement was used for the storage of empty bottles, whisky, brandy, wine and alcohol. All bottles bore the stamp "Medical Department, U.S.N." and were made from molds furnished by the Depot. Usually whisky and wine were received in barrels and were bottled only to fill requisitions.

The first floor, used as a receiving and shipping department, also contained a carpenter shop. The laboratories, issue, packing and assembly sections were located on the second floor. The attic was employed solely for storage. There being no platforms for the loading and unloading of trucks, it was necessary to manhandle every box, case and crate. Trucking facilities consisted of three horses and a light delivery wagon.

(e) Expansion 1918-1934. In January 1918 ground was broken at the southeast corner of Pearl and Sands Streets, Brooklyn, for the erection of a new depot. Early in July the building became available in part for the storage and issue of supplies. Total occupancy was effected on October 15, 1918 at which time the commissioning of the depot took place.

An excellent illustrated description of the Depot by Captain R. P. Crandall, M.C., U.S.N., then in command, was published in the Hospital Corps Supplement to the U. S. Naval Medical Bulletin, April 1919, Vol. 9. At that time the Depot was considered very well located because of its close proximity to the Brooklyn and Manhattan bridges, the Navy Yard and principal railroad terminals. The site was chosen with the problem of transportation in mind. Of brick and reinforced



concrete construction, approximately 100 x 100 feet, eight stories in height, with each floor possessing 10,000 square feet of space (not including the elevator shaft and stairways) the building was more than adequate to meet the requirements at that time. The first floor was utilized by the receiving and shipping departments, the second and third for issues and packing, the fourth, fifth, sixth and seventh for storage, the eighth for offices and laboratories and the basement for shops and power plant. Later the growing demands for more storage facilities necessitated the leasing in 1919 of space in four loft buildings in the vicinity of the Depot. This space was retained until the following year when 20,000 square feet in the Fleet Supply Base (now the Naval Clothing Factory) at 29th Street and Third Avenue, Brooklyn, was allotted to the Depot. In 1921 the fifth floor was partly occupied by the X-ray and Physical Therapy Testing Laboratories.

From July 1918 to early in 1920 garage space in the vicinity of the Depot was rented. During 1920 a three story garage of brick and reinforced concrete construction was erected on Pearl Street between Sands and High Streets. This afforded facilities for servicing the transportation equipment. Its second and third floors and the basement provided additional storage space for medical stores.

In 1934 a six year expansion program was established by the Shore Station Development Board of the Third Naval District. With the exception of provision for increased maintenance facilities, the Depot Local Board, submitted no recommendations for further expansion of the Depot for the ensuing four years.

(f) Expansion 1938-1940. In 1938 the President issued an order for naval expansion. Shortly thereafter the Depot Local Board recommended the construction of an eight story building immediately adjoining the Depot and a one story addition to the garage; the whole at an estimated cost of \$196,000. This project was given eleventh place on the construction program of the Third Naval District.

In October 1939 preliminary measures were taken to acquire a site for the above mentioned addition. Consideration was also given at this time to doubling the size of the garage at an estimated cost of \$20,000. In November 1939 it was recommended that these buildings be constructed: (a) The addition to the Depot to be in general a duplicate of the original building and erected on the site immediately south of the original building on Pearl Street; (b) the enlargement of the garage to be a duplicate and immediately adjoin on the south the original garage. The estimated cost of these two projects was \$321,000.00. In January 1940 the construction of these buildings was given sixteenth place on the program of the Third Naval District.

In the meantime the demands of the rapidly expanding Navy necessitated the immediate acquiring of additional storage facilities. Accordingly, the Depot's space at the Naval Clothing Factory was increased from 20,000 to 44,000 square feet.

(g) Expansion 1940-1943. In the summer of 1940 still further acquisition of space became necessary for the housing of supplies and equipment under assembly for Navy Mobile Hospital No. 1. To this end, pier no. 65, North River, was leased for a few months from the City of New York - the pier being returned to that agency in October 1940.

The value of mobile hospitals having been demonstrated by successful erection and operation of No. 1 at Guantanamo, Cuba, the Bureau of Medicine and Surgery early in 1941 directed the Depot to institute an immediate program for the procurement and assembly of several more. This assembly made it necessary to again acquire pier facilities. Accordingly, on May 15, 1941, pier 53, North River, was leased for one year from the City of New York at an annual rental of \$45,000. At the same time 21,000 square feet of space at 1 Main Street, Brooklyn, was leased from the Gair Realty Corporation at an annual rental of \$10,500. There still not being sufficient space for the increased warehousing of incoming stores, 28,500 square feet at 35 York Street, Brooklyn, was leased on July 1, 1941 from the Gair Realty Corporation at an annual rental of \$11,415.

Late in 1941 the enlargement of the garage (a duplicate of the original) was completed at approximately the same time that construction of the addition (duplicate) to the original Depot building at Sands and Pearl Streets was begun. The approximate total cost of these two buildings (addition to garage and addition to original Depot at Sands and Pearl Streets) was \$501,000.

Mounting demands for further increases in the procurement of medical supplies necessitated the acquirement in 1942 of additional storage space possessing adequate railroad, pier and power house facilities. Accordingly, upon the recommendation of the Shore Station Development Board under date of March 7, 1942, the Secretary of the Navy approved the acquiring, by friendly condemnation proceedings, of land and buildings of the Corn Products Refining Company in Edgewater, New Jersey, (opposite 125th Street, New York City). This was accomplished on May 11, 1942. Covering an area of approximately 26 acres this property included several brick and frame buildings of various heights (some usable and others in process of demolition), a modern concrete-steel pier 800 feet in length, power house and limited railroad sidings. The Naval Appropriation Act of 1943 included funds in the amount of \$3,030,000 for the acquiring and development of this property as an annex of the Brooklyn Depot.



Active use of the two piers and some of the buildings began on May 15, 1942.

The estimated cost of a new (permanent construction) medical supply depot to provide a total of 700,000 square feet of net storage space on the Edgewater site was \$7,430,000. Due to the decision of the Navy Department to restrict the use of steel, this project (Public Works Drawing #303A177(e)) was postponed and in its place one-story temporary buildings of cinder block construction were authorized. These, together with the remodeling of existing buildings, were completed in 1943 and provided a total of ten buildings in the Edgewater Annex. The net storage gained thereby was 604,200 square feet.

Early in 1942 the increasing demands upon the Depot necessitated the acquisition of more storage space in the vicinity of Sands and Pearl Streets, Brooklyn. None being available an urgent recommendation was made for the prompt acquiring of the land immediately to the south of the Depot and the construction thereon of another eight-story building. Authority and funds being granted for this, the construction was rushed and completed on June 29, 1942.

(h) Chronology of the Development of Naval Medical Supply Depot, Brooklyn.

- 1850 - Establishment of a Naval Laboratory in one room on the upper floor of the contagion building, U. S. Naval Hospital, Brooklyn, N.Y.
- 1853 - Construction and equipping of a pharmaceutical laboratory in a small two-story building within the grounds of U. S. Naval Hospital, Brooklyn, N.Y.
- 1893 - Addition of teaching department and change of name to the Naval Laboratory and Department of Instruction.
- 1906 - Construction and occupation of a new two-story building on the northeast corner of the U. S. Naval Hospital, Brooklyn, N. Y.
- 1918 - Construction and occupation of new eight-story building, approximately 100 feet square, at Sands and Pearl Streets, Brooklyn, N. Y.
- 1919 - Leasing of additional storage space in four buildings in the vicinity of Sands and Pearl Streets, Brooklyn, N. Y.
- 1920 -
  - (a) Additional storage space leased in 1919 relinquished.
  - (b) Three-story garage for the Depot erected on Pearl Street, between Sands and High Streets, Brooklyn. Prior to this, garage space in the vicinity was leased.
  - (c) 20,000 square feet of space in the Fleet Supply Base (now in the Naval Clothing Factory) at 29th Street and Third Avenue, Brooklyn, allotted to NMSD, Brooklyn.

- 1940 - NMSD, Brooklyn storage space at Naval Clothing Factory increased to 44,000 square feet.  
 June - Pier 65, North River, leased from the City of New York for the assembly of Mobile Hospital No. 1.  
 October- Lease of pier 65, North River, terminated.

1941

- May - (a) Pier 53, North River, leased from the City of New York for the assembly of additional mobile hospitals.  
 (b) 21,000 square feet of storage space at 1 Main Street, Brooklyn, leased from the Gair Realty Corporation.  
 July - 39,500 square feet of storage space at 35 York Street, Brooklyn, leased from the Gair Realty Corporation.  
 Nov. - (a) Completed enlargement of Depot's garage to twice the size of the original building erected in 1920.  
 (b) Completed enlargement of the Depot to twice the size of the original building constructed in 1918.

1942

- May - (a) Acquisition of property covering an area of 25.9 acres of the Corn Products Refining Company at Edgewater, New Jersey. Active use of the two piers and some of the buildings began on May 15.  
 (b) Relinquished 15,000 square feet of storage space allotted to NMSD, Brooklyn at Naval Clothing Factory -- leaving 29,000 square feet remaining.  
 June 29- Construction completed of Depot Annex, eight stories high, 100 ft. deep, 200 ft. wide on High Street extending from Pearl to Jay Streets. This building duplicated the storage space in the original building, constructed in 1918 at Sands and Pearl Streets, and enlarged in November 1941 by its extension to High Street.  
 October- Remaining 29,000 square feet of storage space at Naval Clothing Factory relinquished.

1943

- June - Storage space of 21,000 square feet, at 1 Main Street, Brooklyn, and storage space of 39,500 square feet at 35 York Street, Brooklyn, relinquished.  
 Nov 25 - Construction of temporary buildings and alteration of the remaining permanent buildings - the annex at Edgewater, New Jersey, officially completed.  
 Dec 1 - Net storage space available:  
 (a) At NMSD, Brooklyn 248,000 square feet  
 (b) At Edgewater, N.J. Annex 604,200 square feet  
 TOTAL 852,200 square feet

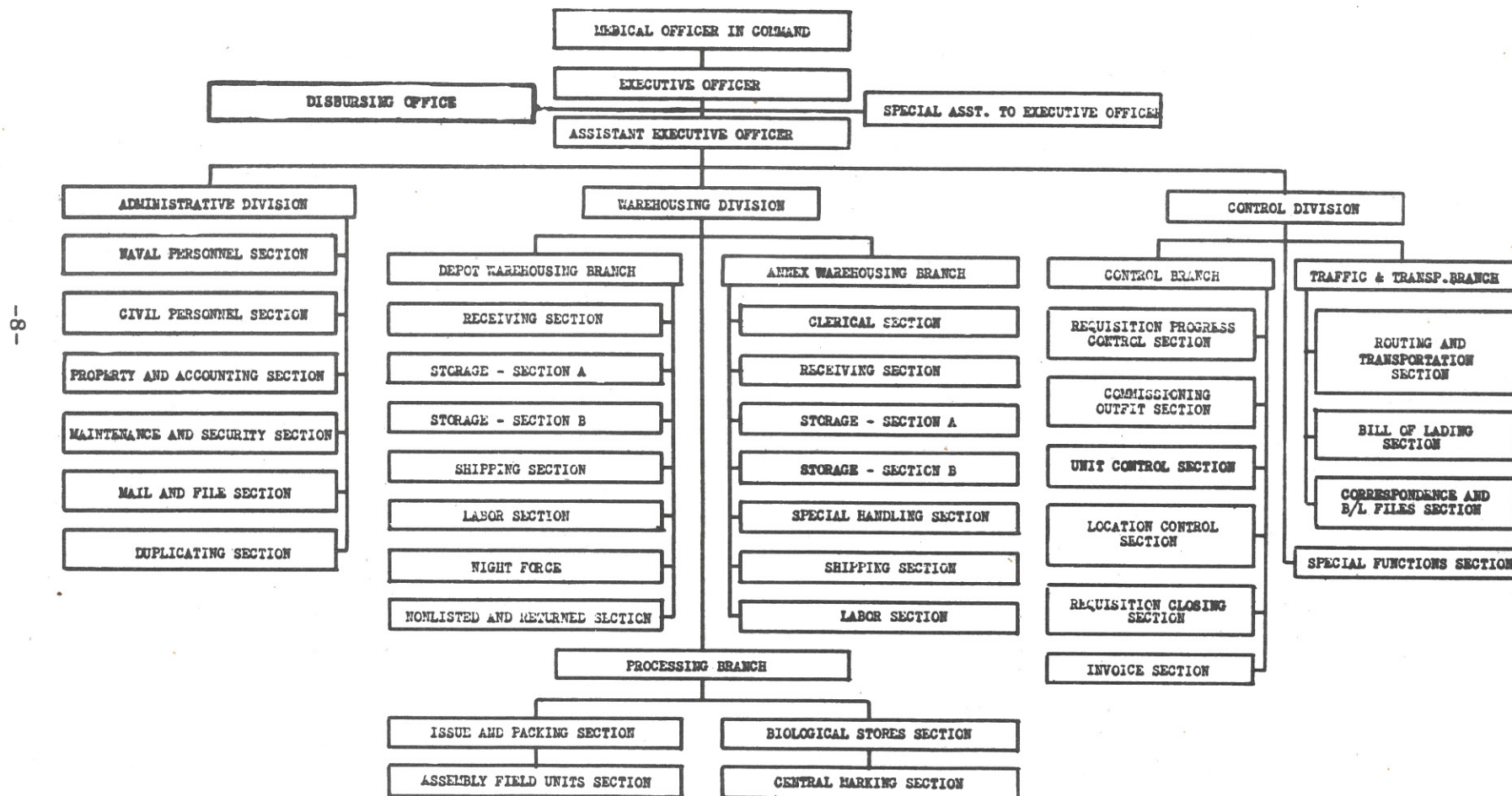
## 2. Organization

(a) Functions. The functions of the U. S. Naval Medical Supply Depot, Brooklyn, New York, are: (a) To receive, store and distribute Naval Medical Department supplies and equipment as directed by the Bureau of Medicine and Surgery; (b) To maintain facilities for the salvage and repair of returned medical supplies and equipment; (c) To establish and conduct a school for the repair and servicing of electro-medical equipment.

(b) Functional Organization. The functional organization of the U. S. Naval Medical Supply Depot is shown in figure 1.



FIGURE 1  
 ORGANIZATION OF THE  
 U. S. NAVAL MEDICAL SUPPLY DEPOT  
 BROOKLYN, N.Y.  
 - JANUARY 1, 1945 -





### 3. Personnel

(a) Naval Personnel. In July 1917 the personnel of the Depot was comprised of: (a) A Medical Inspector, U.S.N., the commanding officer; (b) two pharmacists; and (c) seven hospital corpsmen; a total complement of ten.

The data on naval personnel from calendar years 1939 to 1944 are shown in section F of figure 2. It will be noted that the average naval complement increased from 12 officers and 17 enlisted personnel, a total of 29 in 1939 to 76 officers and 134 enlisted personnel, a total of 200, in 1944.

Reference to section A of figure 2 shows that the Navy and Marine Corps expanded over twentyfold from 1939 to 1944. While the Depot's personnel increased sevenfold during the same period, its work load was decentralized and assigned to other depots.

(b) Civil Personnel. In July 1917 the Depot had 13 civil employees who served as laboratory assistants, bookkeepers, receiving and shipping clerks, carpenters, storekeepers, packers, laborers and drivers. No guards or watchmen were on the payroll, the Depot was locked at the end of the day's work, and the keys were turned over to the Marine Guard at the Hospital's gate.

(c) On August 16, 1918, by an act of Congress, Mr. W. V. Stueber became the first civil service employee to join the Depot's staff. His 26-year record of service has been one of continuous, faithful and highly efficient service.

Until August 1918 all civil employees attached to the Depot were classed as "laborers" or "special laborers" - the latter occupying clerical positions. Then those employees meeting the requirements were either "written into" the Civil Service or were discharged. It was understood that those "written in" were to receive the same rate of pay as before.

Examples of Depot salaries and hours of work in 1917-18 were as follows: For packers - \$70.00 a month; for laborers - \$60.00. The hours were from 0800 to 1700 six days a week. In an emergency, employees worked willingly on holidays, Sundays and evenings. Overtime pay was unknown. During three of the summer months one-half day off was granted.

In July 1945 the salary of a packer averaged approximately \$160.00 a month for a 5-day week. For working Saturdays at 1-1/2 overtime, an additional \$47.00 was earned monthly. The salary of laborers was slightly lower being \$137.60 monthly with \$41.00 for Saturdays at 1-1/2 overtime.

FIGURE 2.

## BROOKLYN NAVAL MEDICAL SUPPLY DEPOT

RESUME  
FROM 1 JANUARY, 1939

A - AVERAGE PERSONNEL

C - SHIPMENTS

E - NET STORAGE SPACE

B - OBLIGATIONS

D - TEST INSPECTIONS

F - AVERAGE DEPOT PERSONNEL

	1939	1940	1941	1942	1943	1944
A - AVERAGE PERSONNEL - NAVY & MARINE CORPS - FISCAL YEAR	174,641	192,925	290,873	512,823	2,815,200	3,500,000
B - OBLIGATIONS PROCUREMENTS INITIA- TED FUNDS FOR MEDICAL STORES - FY	1,527,441	1,942,997	5,915,781	30,897,290	139,825,197	34,533,733
C-REQNS SHIPPED BY NMSD,BKLYN - C.Y.	3,426	4,962	8,849	41,567	53,284	60,837
TONS SHIPPED BY NMSD,BKLYN - C.Y.	1,504	2,835	6,769	28,368	32,910	26,189
D - TEST INSPECTIONS AT NMSD, BKLYN CALENDAR YEAR	2,125	8,750	17,875	36,375	45,014	41,531
E - NET STORAGE SPACE - NMSD, BKLYN CALENDAR YEAR	82,000	120,000	359,000	716,000	865,000	848,000
F - AVERAGE DEPOT PERSONNEL - PER C.Y.						
1. MEDICAL OFFICERS - REGULAR	3	3	4	6	9	11
- RESERVE	0	1	1	0	2	2
2. DENTAL OFFICERS - REGULAR	1	1	1	1	2	3
RESERVE	0	0	0	1	1	1
3. HOSPITAL CORPS OFFICERS						
REGULAR	8	9	12	24	43	48
RESERVE	0	0	1	4	5	6
4. NON-MEDICAL DEPT. OFFICERS						
REGULAR	0	0	0	0	0	0
RESERVE	0	1	1	1	3	5
5. ENLISTED -	17	26	31	25	8	10
RESERVE	0	0	11	42	86	124
6. CIVILIAN - GROUP IV B						
LABOR GROUP	30	35	54	177	283	314
	25	32	90	230	325	318
TOTAL PERSONNEL	84	108	206	511	767	842

4. Roster of Commanding Officers.

BENJAMIN FRANKLIN BACHE, Surgeon, USN - 11-1-53 to 10-1-71.	THOMAS A. BERRYHILL, Medical Inspector, USN - 6-2-11 to 5-15-14.
ANDREW A. HENDERSON, Medical Director, USN - 10-1-71 to 4-4-75.	EDWARD S. BOGERT, Medical Inspector, USN 4-4-14 to 1-10-16.
LEWIS J. WILLIAMS, Medical Director, USN - 4-7-75 to 5-1-80.	RAND P. CRANDALL, Medical Inspector, USN 11-15-15 to 6-23-19.
SAMUEL F. COULES, Medical Director, USN - 5-1-80 to 4-1-83.	EDWARD S. BOGERT, Captain, M.C., USN 6-23-19 to 7-2-23.
DELAVAN BLOODGOOD, Medical Director, USN - 4-1-83 to 9-28-86.	HOLTON C. CURL, Captain, M.C., USN 7-2-23 to 6-4-27.
JOHN C. SPEAR, Medical Director, USN - 9-28-86 to 6-30-87.	CHARLES H.T. LOWNDES, Rear Admiral, M.C., USN - 6-4-27 to 2-15-29.
DELAVAN BLOODGOOD, Medical Director, USN - 6-30-87 to 8-20-93 .	GEORGE T. SMITH, Rear Admiral, M.C., USN - 3-1-29 to 9-4-29.
HENRY M. WELLS, Medical Director, USN - 8-21-93 to 1-20-97.	EUGENE J. GROW, Captain, M.C., USN 9-23-29 to 10-5-33.
THOMAS C. WALTON, Medical Director, USN - 1-19-97 to 5-29-00.	JAMES C. PRYOR, Rear Admiral, M.C., USN - 10-5-33 to 3-30-35.
THOMAS H. STREETS, Medical Inspector, USN - 3-8-00 to 5-1-03.	CHARLES S. BUTLER, Rear Admiral, M.C., USN 4-1-35 to 9-29-36.
GEORGE E.H. HARMON, Medical Inspector, USN - 5-1-03 to 12-15-04.	GARDNER F. ROBERTSON, Captain, M.C., USN - 9-29-36 to 4-18-39.
DANIEL N. BERTOLETTE, Medical Inspector, USN - 12-15-04 to 1-8-07.	MONTGOMERY A. STUART, Captain, M.C., USN - 4-18-39 to 4-17-41.
PAUL FITZSIMONS, Medical Director, USN - 1-8-07 to 10-23-09	KENT C. MELHORN, Captain, M.C., USN 4-17-41 to 9-15-42.
PHILLIPS A. LOVERING, Medical Inspector, USN - 10-23-09 to 6-30-11.	*KENT C. MELHORN, Rear Admiral, M.C., USN - 9-15-42 to -

\*Chief of the Materiel Division, effective  
November 10, 1943 with additional duty as  
Medical Officer in Command, Naval Medical  
Supply Depot, Brooklyn, N. Y.



## 5. Inspection Laboratories.

(a) Establishment. The efficiency of the Depot was greatly enhanced in 1917 with the establishment of modern chemical and physical laboratories. Prior to this, drugs had been accepted without thorough tests by the Depot. Although it was required that drugs should comply with U.S. Pharmacopea standards, adequate tests were seldom made. If upon ordinary inspection a drug compared favorably with the standard sample, it was accepted. The same unsatisfactory procedure applied to other supplies and to equipment. Following the establishment of the new laboratories, all drugs were carefully tested. Hospital supplies and equipment were inspected thoroughly for quality, durability, workmanship, physical properties and correct labelling. During the first six months of 1917 the following rejections were recorded:

<u>Item</u>	<u>Number of Items Tested</u>	<u>Number of Rejections</u>
Drugs	216	24
Hypodermic Tablets	55	13
Surgical Instruments	35	4
Surgeons Accessories	29	7
Rubber Goods	13	2

(b) Current Program. The inspection and testing of materials during the great expansion period of the last three (3) years is one of the most important of the Depot's functions in that it prevents the acceptance of dangerous and faulty materials. By reference to figure 3 it will be seen that 1943 was the peak year. Likewise, the steady growth of the naval medical facilities is well reflected in the data shown in figure 3.

(c) Tests on New and Substitute Materials. The testing laboratory has been frequently used in ascertaining the suitability of substitute materials which had to be used because of war conditions. Much of this work was done in close co-operation with the Army, manufacturers, National Bureau of Standards, and with the clinical facilities of many naval activities. Newly developed instruments and devices were tested in a like manner.

Manufacturers and smaller war plants, who are often inexperienced in the manufacture and testing of materials, have found the inspection laboratory of real assistance. Suggested changes in design of dental and surgical instruments, operating gowns, and in packaging are instances whereby the Navy was directly benefited by the consulting assistance it rendered via the testing laboratory.

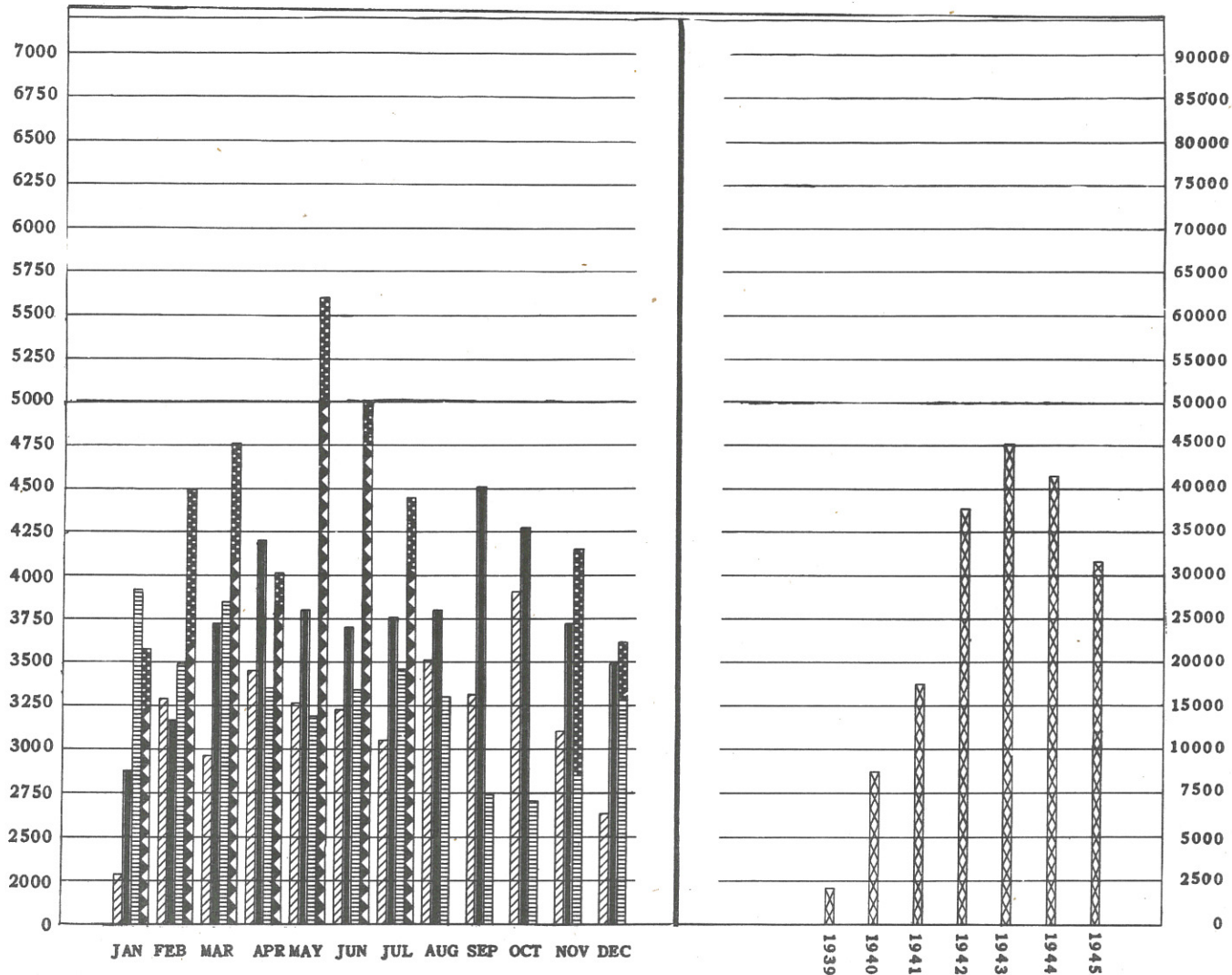
No. inspections completed

FIGURE 3

# PROGRESS REPORT INSPECTION

by month 1942  
by month 1943  
by month 1944  
by month 1945  
by years

Number inspections of returned stores



(d) Tests on Faulty Materials. Whenever it is reported that material supplied by this Depot is not satisfactory, a request is made for a sample so that proper examination may be made in the laboratory. If the material is found faulty in quality or design, appropriate changes are made in the specification to prevent recurrence. If tests clearly indicate that the material has been improperly used, the probable reasons for failure are given to the reporting activity. By this method excellent experience has been gained by the Depot and the naval service at large. Every encouragement is accorded activities to criticize supplies and equipment as furnished by the Medical Department.

(e) Cooperation with Army Medical Procurement Office. Testing equipment of the Army and Navy has been used reciprocally by both services. There has been a close personal interchange of test data with the Army Medical Procurement Office at 52 Broadway, New York. This has been useful in substantiating test procedure and results. Likewise, it has been of a direct benefit, as on several occasions the Army has notified the Navy of the rejection of defective material, and conversely. Where the same contractor is supplying both services, this prevents rejected material from being shuttled from one to the other.\* This interchange of data is most effective in detecting defective material, when only spot testing of a few random samples is practicable in war.

#### 6. Medical Stores Requisitions and Invoices.

(a) Decentralization. A decentralization of the medical supply system became effective on July 1, 1944 by AlNav 102-44 dated June 5, 1944. Prior to this date, all Navmed Form-4 requisitions were edited for the entire naval establishment at the Naval Medical Supply Depot, Brooklyn, N. Y. The widespread dispersal of our naval forces and activities caused considerable delay in the receipt of requisitions and delivery of the materiel. Therefore, the editing of requisitions by the nearest depot or storehouse seemed indicated in the interest of the war effort. This policy possibly should have been adopted earlier than July 1, 1944 when there was urgent need for a rapid filling of the pipeline for medical supplies. The continuance of the decentralization of the medical supply system in post-war planning will probably depend upon the size and dispersal of our naval forces. It is estimated that the decentralization saved approximately two weeks in making deliveries of medical stores to the Pacific Ocean areas and to far west continental activities.

(b) Servicing of a requisition. The various steps involved in the servicing of a requisition or invoice are shown diagrammatically in figure 4.



### FLOW OF MEDICAL STORES REQUISITIONS AND INVOICES



(c) Progress Reports - Control. The supplying of materiel for the Medical Department of the Navy is reflected in rate of flow of requisitions and invoices from the using activities into the supply depots and storehouses and out again to the using activity. This cycle is reflected in data from stock control shown in figures 5, 6 and 7 by months from July 1, 1942 to June 30, 1945. In figure 5, which covers the fiscal year 1943, it will be noted that the number of requisitions held in backlog at the Depot was approximately 3,600 at the end of July 1942. This was high tide and the crisis month as only about 4,600 requisitions were released. A review of the ensuing three fiscal years will show that at no time subsequent to July 1942 was the situation at all precarious as there was a great increase in the number of requisitions received and released and a marked reduction of the number held in backlog.

FIGURE 5

Total req'ns. received:  
 Total req'ns. released:  
 Total req'ns. unreleased at end of month:  
 No. items released, divided by 30  
 Total req'ns. brought forward on 1 July, 1942:  
 Med. Storehouse, Norfolk, Va.  
 Med. Storehouse, Newport, R.I.  
 Med. Storehouse, (other)



# PROGRESS REPORT 1942 CONTROL 1943

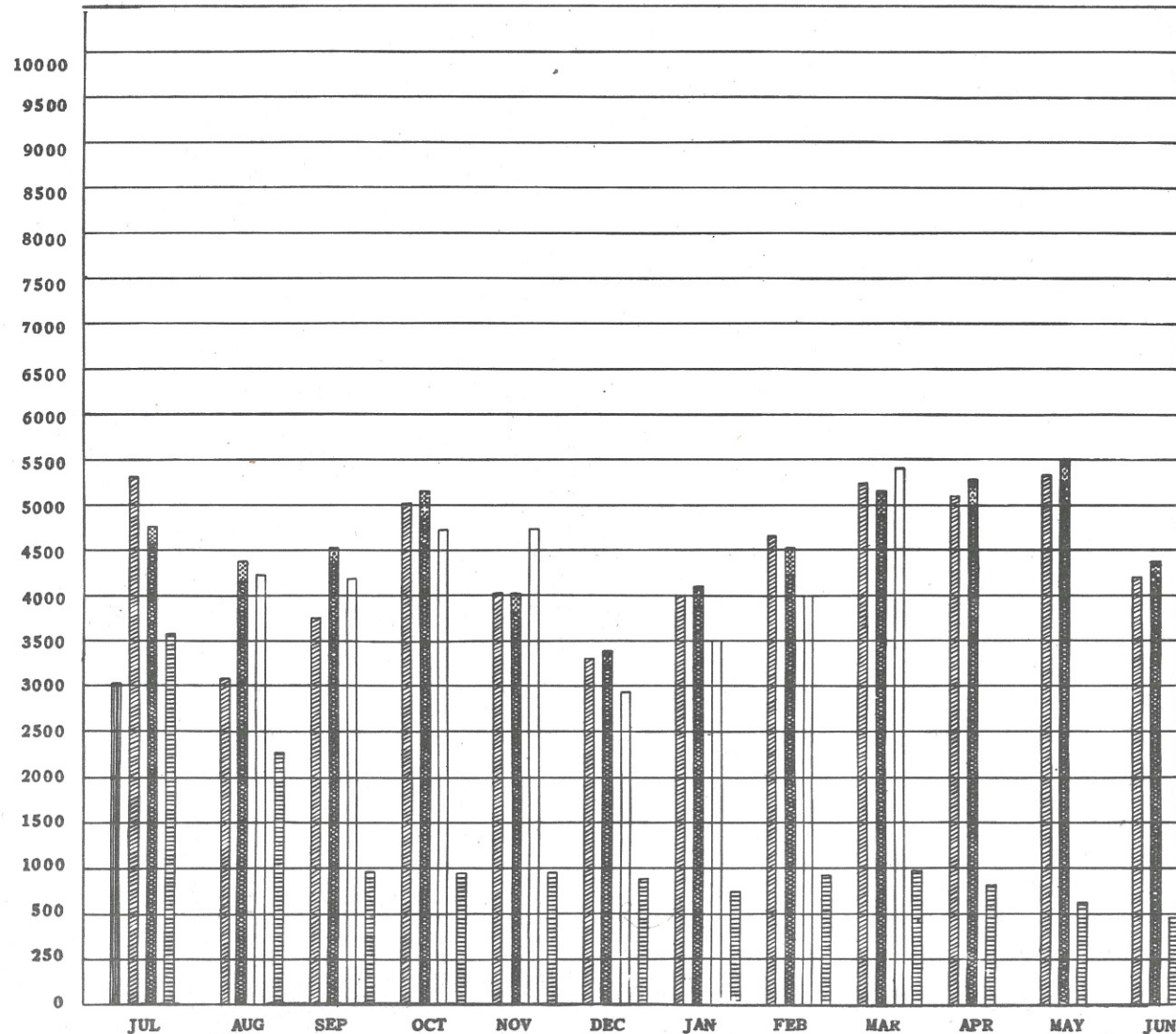




FIGURE 6

# PROGRESS REPORT

## 1943 CONTROL 1944

Total req'ns. rec'd.:  
 Total req'ns. released:  
 Total req'ns. unreleased at end of month:  
 Total req'ns. br. fwd. on 1 July, 1943:  
 Nav. Med. Supply Storehouse, Norfolk, Va.  
 Nav. Med. Supply Storehouse, Newport, R. I.:  
 Nav. Med. Supply Storehouse (OTHER):

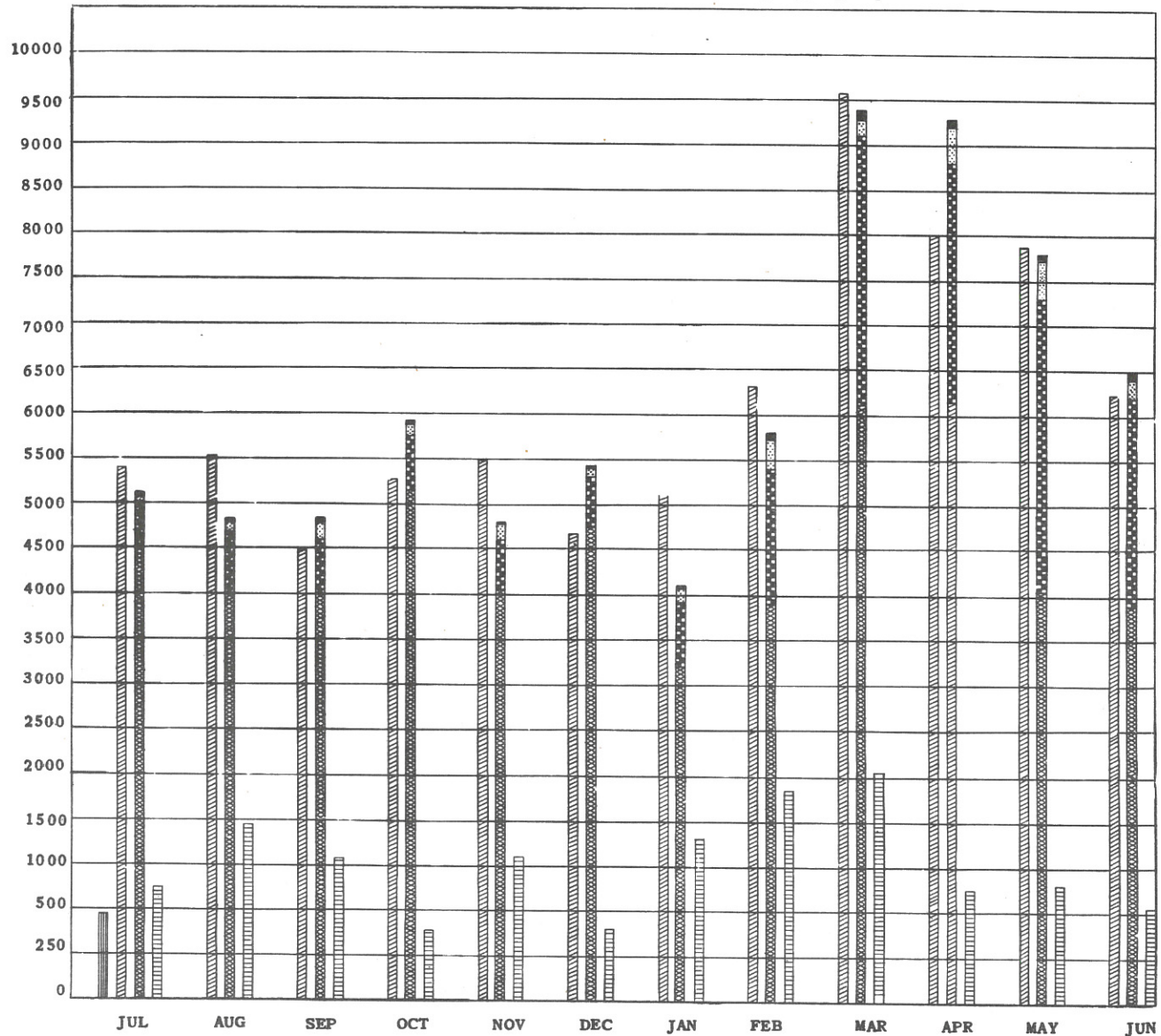
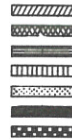


FIGURE 7

No. req'ns. brought forward.  
 No. req'ns. received  
 No. req'ns. released to ISSUES  
 No. req'ns. released to other depots (July only).  
 No. req'ns. unreleased at end of month.

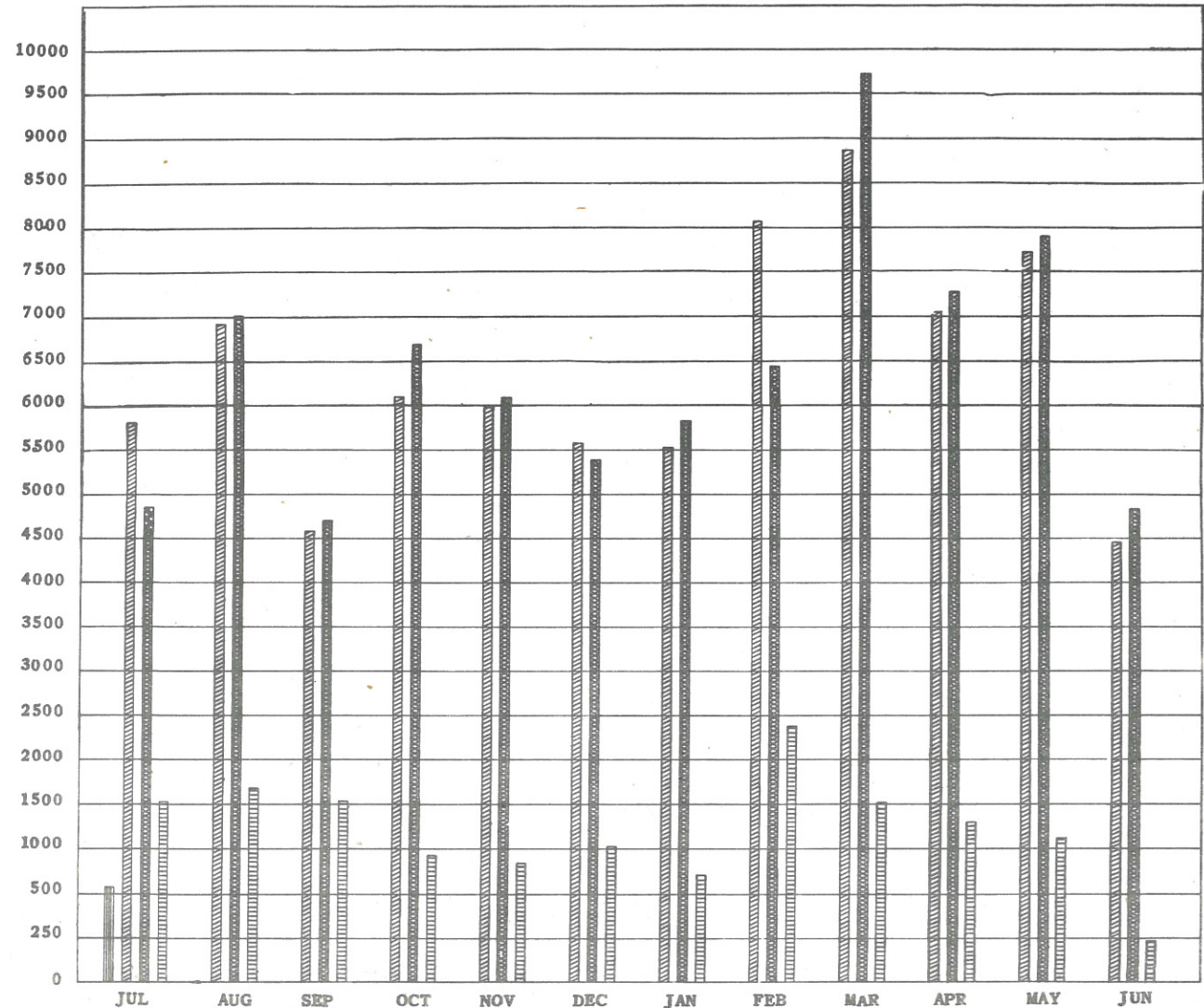


# PROGRESS REPORT

CONTROL

1944

1945



(d) Progress Reports - Issue. In figures 8, 9 and 10, representing fiscal years 1943, 1944 and 1945, respectively, are shown by month the progress of requisitions received in the Issue Section (see figure 1) of the Depot.

As the tempo of the war increased and as the scene of fighting went farther westward the quantity of issues mounted until at times in fiscal year 1945 (figure 10), as many as about 9,000 requisitions a month were passed from the issue to shipping and packing sections.



Total req'ns. received:  
 Total req'ns. released:  
 Total req'ns. unfilled at end of month:  
 No. pieces packed, divided by 20  
 Med. Storehouse, Norfolk, Va.  
 Med Storehouse, Newport, R. I.



# FIGURE 8

## PROGRESS REPORT

### ISSUES

#### 1942 1943

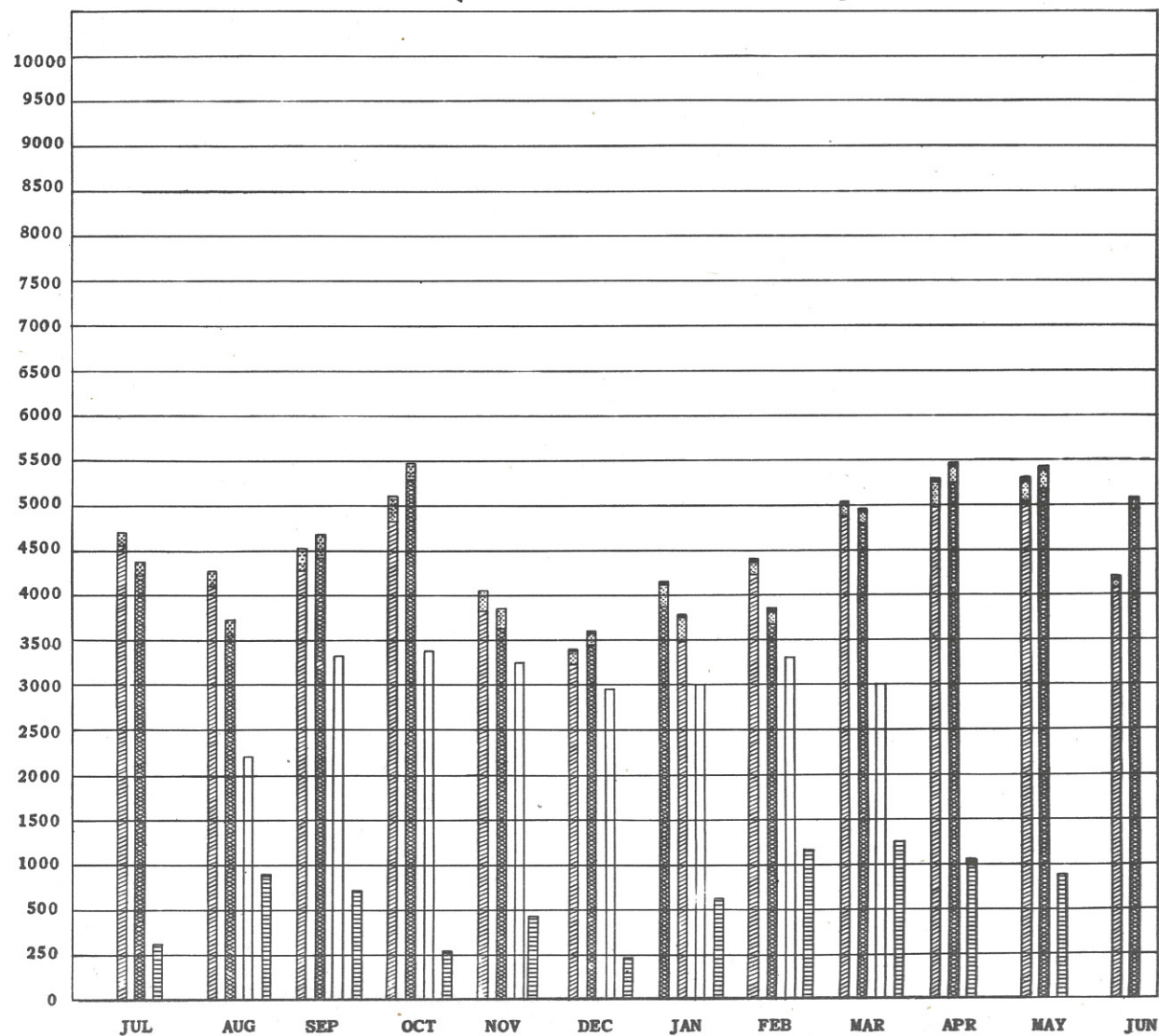


FIGURE 9

# PROGRESS REPORT

1943

ISSUES

1944

Total req'ns. received:  
 Total req'ns. released:  
 Total req'ns. unfilled at end of month:  
 Nav Med. Supply Storehouse, Norfolk, Va:  
 Nav. Med. Supply Storehouse, Newport, R.I.:

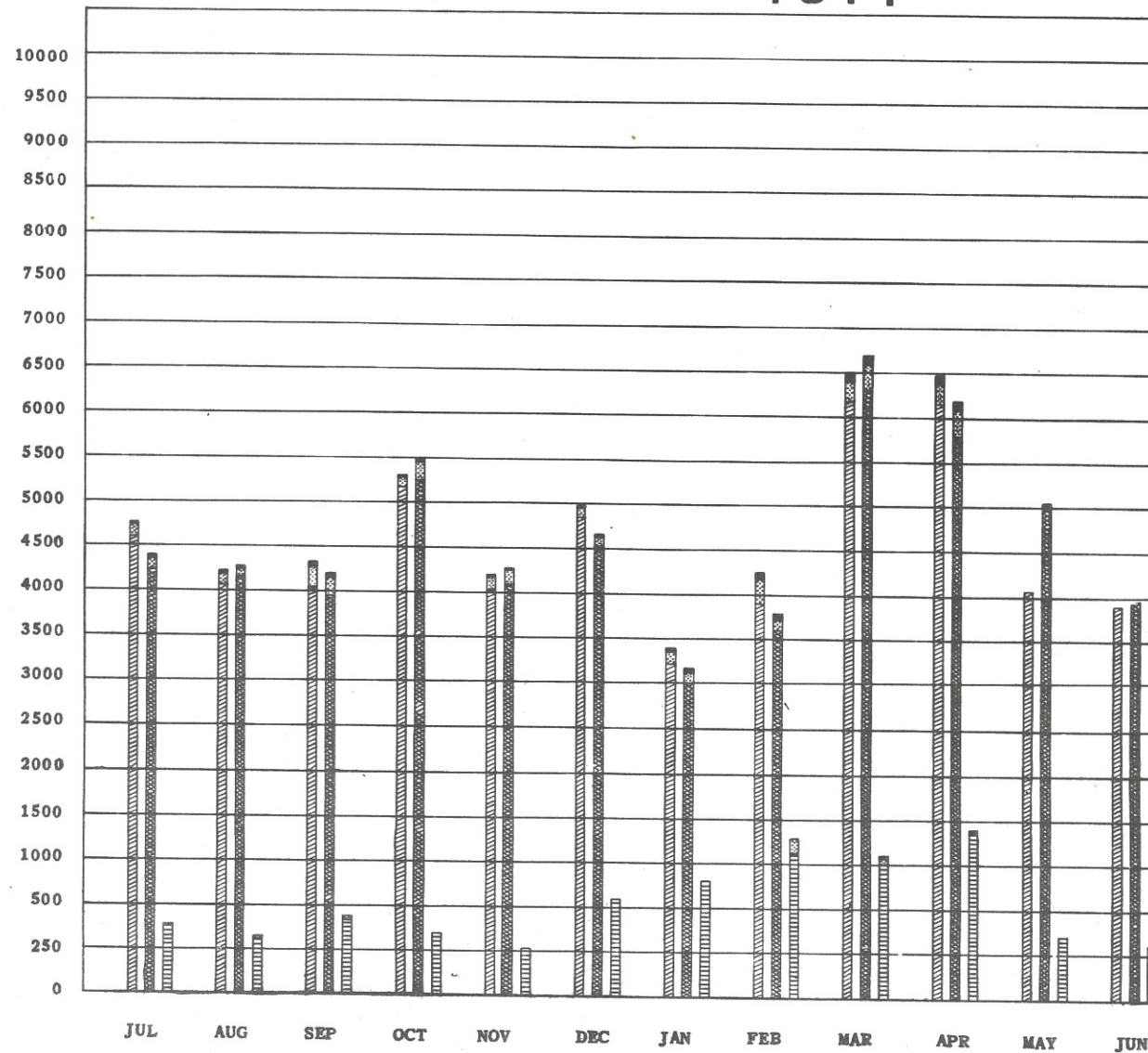


FIGURE 10

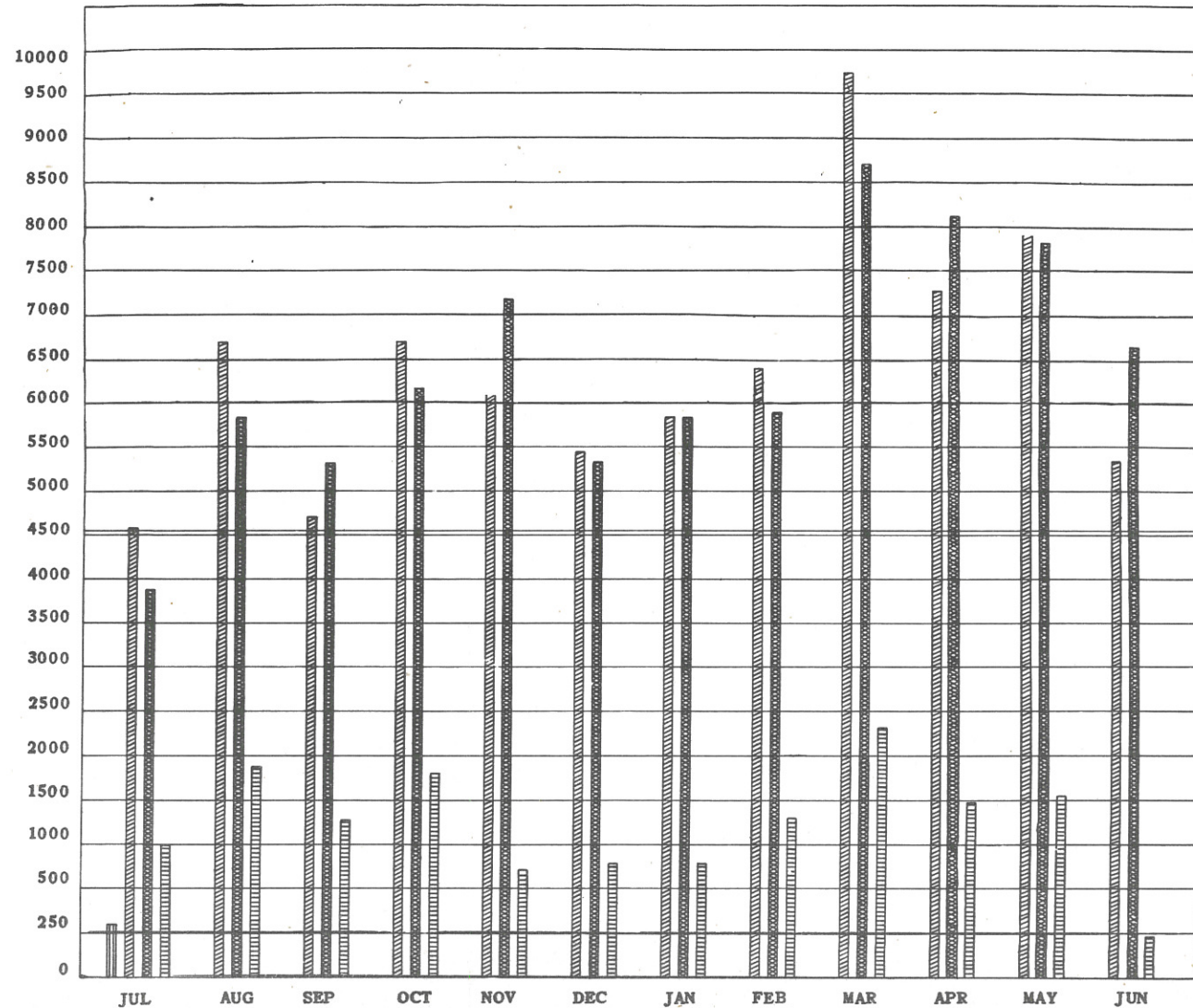
# PROGRESS REPORT

ISSUES

1944

1945

No. req'ns. brought forward  
 No. req'ns. received from CONTROL  
 No. req'ns. released to SHIPPING  
 No. req'ns. unreleased at end of month





(e) Progress Reports - Shipping. It is interesting to note that during the calendar year 1918 6,207 requisitions were filled.

The data in figures 11, 12 and 13 show that a total of 52,010 requisitions were shipped during fiscal year 1943, 53,479 during 1944 and 76,487 during 1945.

A comparison of the foregoing data show clearly the difference in magnitude between World War I and World War II.

Data giving tons of material shipped during period of January 1, 1942 to June 30, 1945, from U. S. Naval Medical Supply Dept, Brooklyn, N.Y. and Annex, Edgewater, N. J. follow:

<u>IN TONS</u>							
1942	Rail Freight	Railway Express	Motor Carrier	Air Transport	Depot Truck	Naval Transp.	Commercial Ships
JAN.	790	35	400	-	240	9	-
FEB.	497	20	252	-	24	48	-
MAR.	820	41	658	-	397	18	-
APR.	1097	96	450	-	36	19	-
MAY	1720	83	411	-	310	1	-
JUNE	2982	98	559	-	1	2	-
JULY	5464	104	643	-	-	55	-
AUG.	1830	282	576	7	23	1	-
SEPT.	1336	265	678	-	-	61	-
OCT.	2735	279	665	-	74	51	-
NOV.	1472	478	355	-	-	82	42
DEC.	1887	176	484	-	46	73	26
TOTALS							
IN TONS							
	22630	1957	6131	7	1151	420	68
<u>1943</u>							
JAN.	1725	161	410	2	6	42	5
FEB.	1317	134	279	-	142	55	-
MAR.	1463	136	567	-	216	93	4
APR.	3008	90	660	-	255	68	-
MAY	2767	65	619	-	382	16	38
JUNE	1617	49	450	4	281	-	16
JULY	1414	182	197	23	202	-	2
AUG.	1837	47	521	17	166	-	8
SEPT.	2948	38	694	-	280	-	18
OCT.	2032	46	500	-	294	-	3
NOV.	1955	29	607	5	375	-	18
DEC.	1378	34	613	2	258	-	22
TOTALS							
IN TONS							
	23461	1011	6117	53	2857	274	134

1944	Rail Freight	Railway Express	Motor Carrier	Air Transport	Depot Truck	Commercial Ships	Mail
JAN.	1324	37	414	1	381	18	-
FEB.	1226	57	392	1	375	6	-
MAR.	1474	52	492	6	452	3	-
APR.	1848	58	407	2	455	54	-
MAY	1291	50	519	2	636	78	-
JUNE	1337	35	377	2	405	23	-
JULY	850	47	336	2	308	5	-
AUG.	1258	60	345	2	104	-	10
SEPT.	1243	79	276	2	328	-	10
OCT.	2041	96	321	5	308	-	15
NOV.	1600	143	364	5	204	-	16
DEC.	829	65	363	6	244	-	10

## TOTALS

## IN TONS

16321	779	4606	36	4200	187	61
-------	-----	------	----	------	-----	----

1945

JAN.	1301	183	373	3	337	-	10
FEB.	1008	124	268	6	185	-	11
MAR.	1591	160	240	4	186	-	14
APR.	589	55	201	59	744	-	13
MAY	1055	79	346	47	570	-	11
JUNE	1237	92	372	2	560	-	8

## TOTALS

## IN TONS

6781	693	1800	121	2582	-	67
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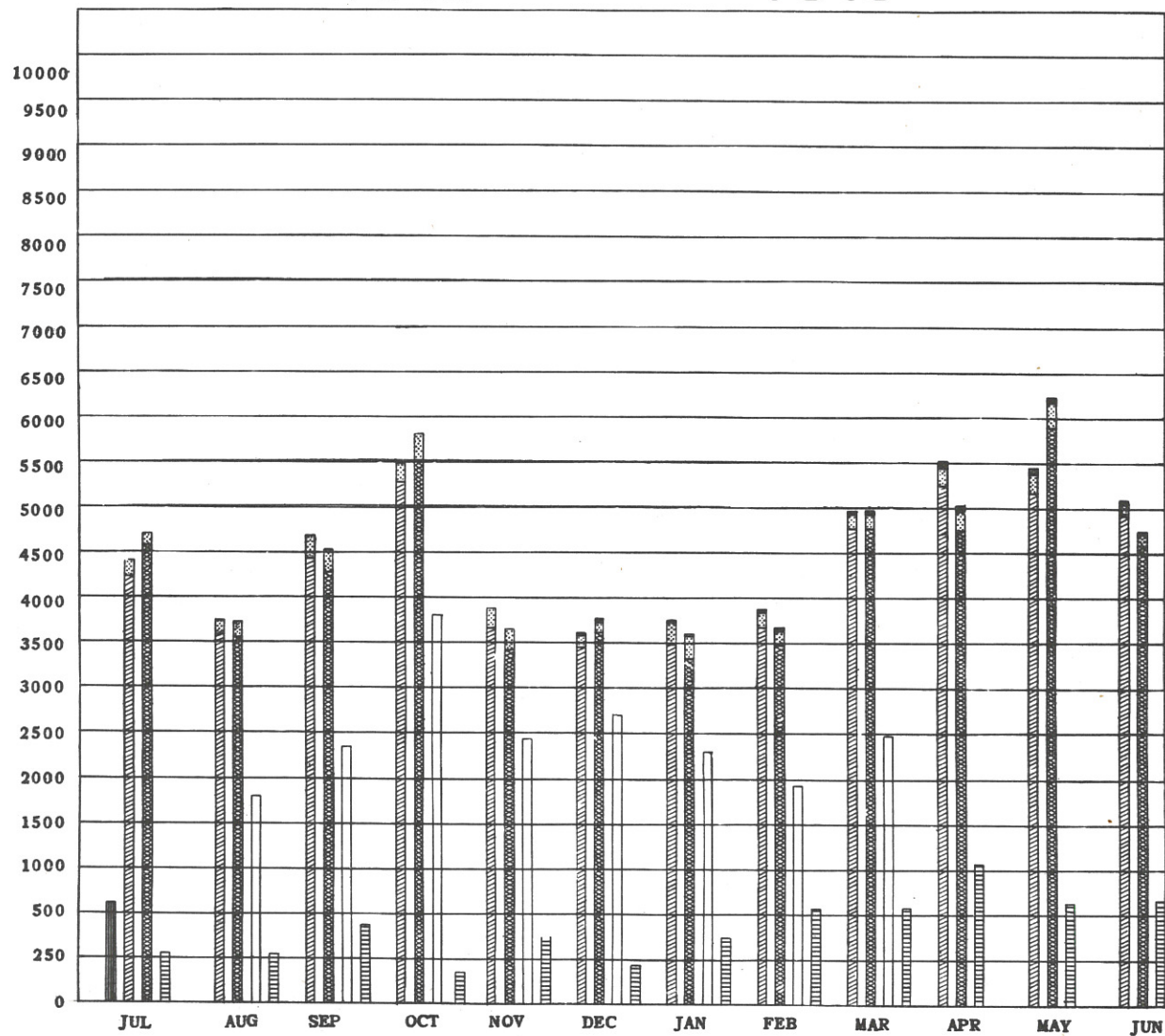
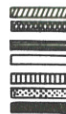
BARGES - May 1945 - 344 Tons  
 June 1945 - 121 Tons

FIGURE 11

# PROGRESS REPORT

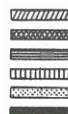
## 1942 SHIPPING 1943

Total req'ns. received  
 Total req'ns. shipped  
 Total req'ns. not shipped at end of month:  
 Total tons shipped, (ACTUAL)  
 Total req'ns. brought forward on 1 July 1942:  
 Med. Storehouse, Norfolk, Va.  
 Med. Storehouse, Newport, R.I.





Total req'ns. received:  
 Total req'ns. shipped:  
 Total req'ns. not shipped at end of month:  
 Total req'ns. br. fwd. on 1 July 1943:  
 Nav.Med.Supply Storehouse, Norfolk, Va.:  
 Nav.Med.Supply Storehouse, Newport, R.I.:



# FIGURE 12

## PROGRESS REPORT

### SHIPPING

#### 1943 1944

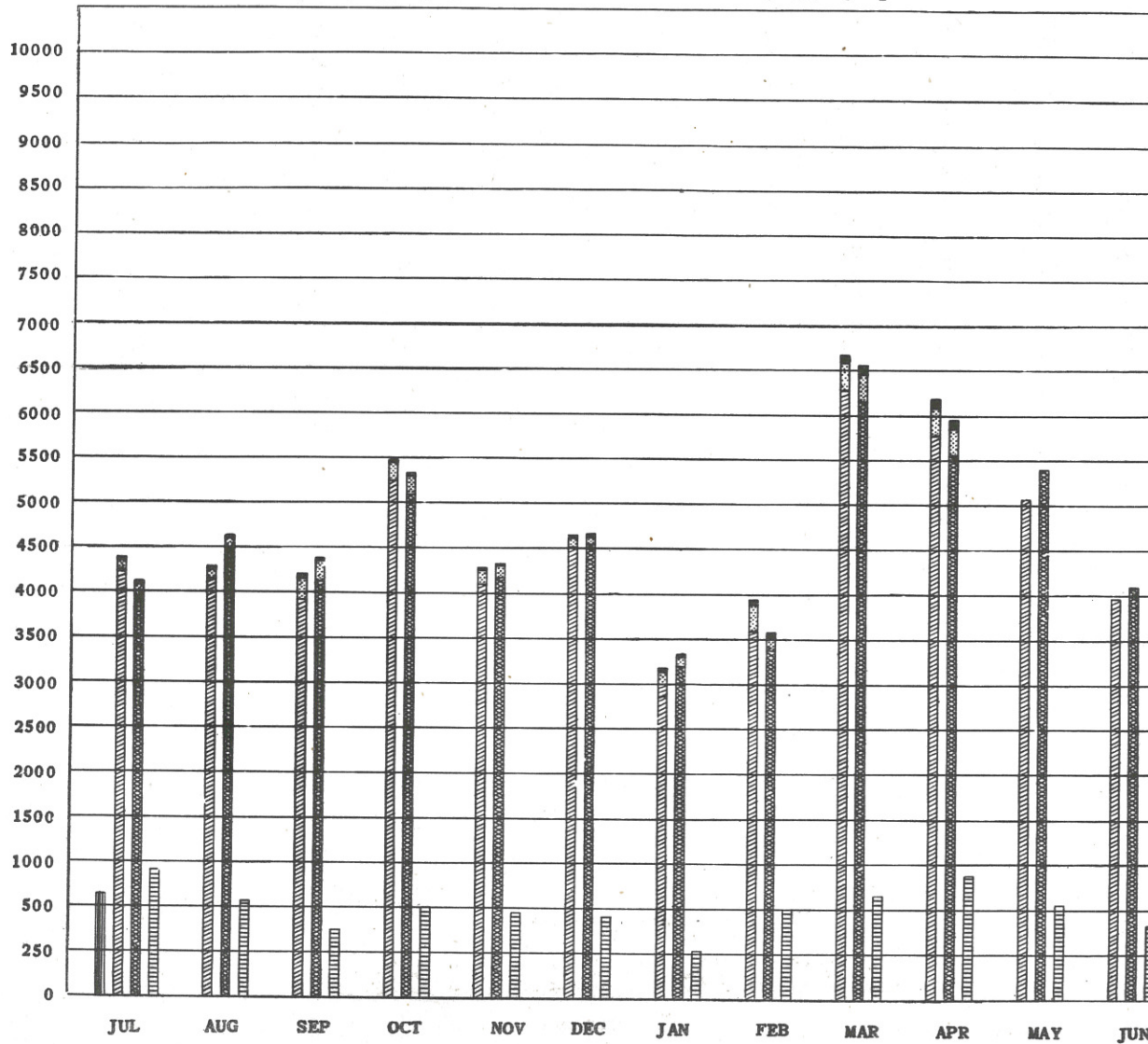


FIGURE 13

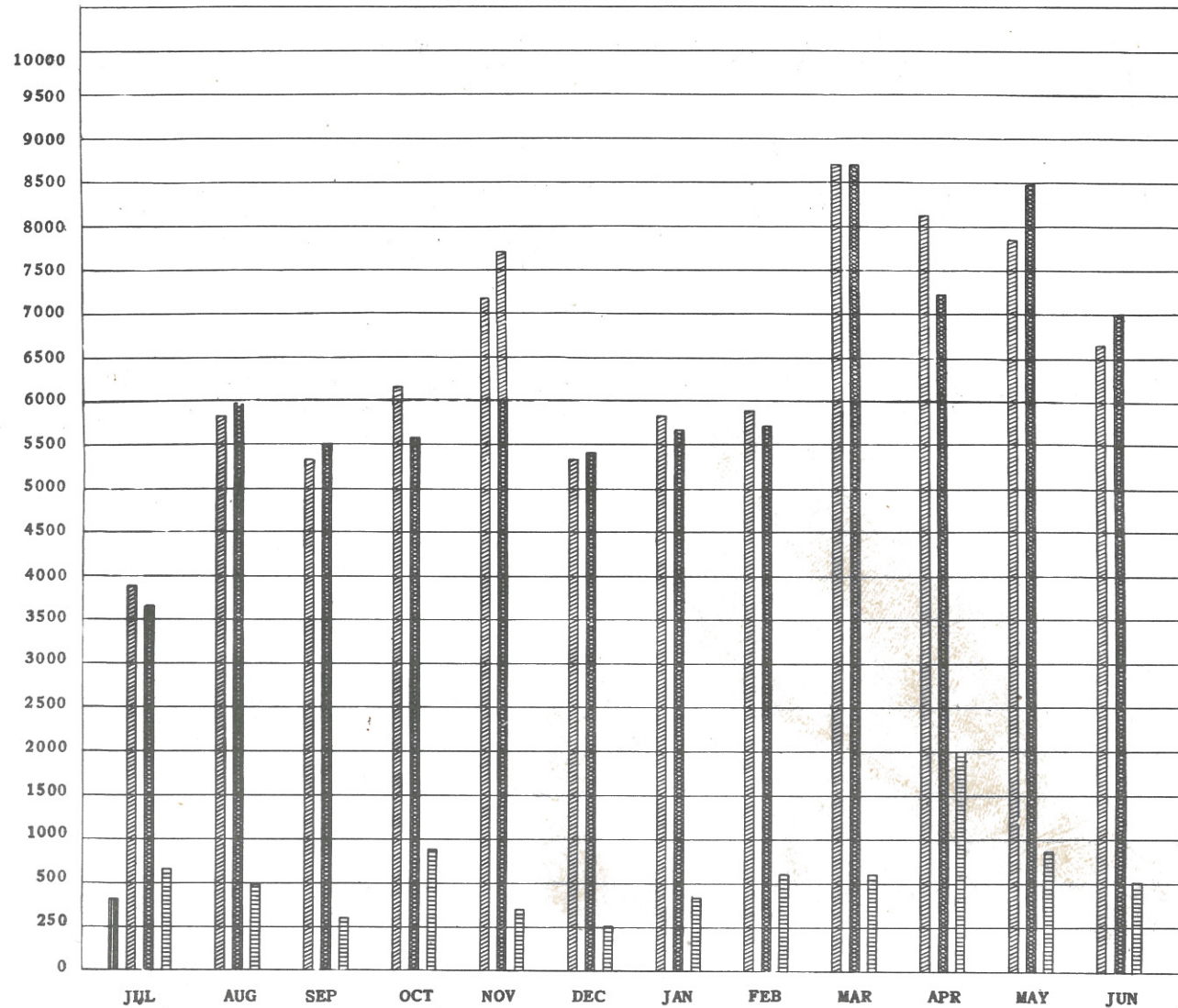
# PROGRESS REPORT

## SHIPPING

1944

1945

No. req'ns. brought forward  
 No. req'ns. received from ISSUES  
 No. req'ns. shipped  
 No. req'ns. not shipped at end of month





## II MATERIEL DIVISION, BUREAU OF MEDICINE AND SURGERY.

### 1. Establishment.

During the early part of the war various functions that related to Medical Department supplies and equipment were scattered among the Planning and Finance Divisions of the Bureau of Medicine and Surgery and the Naval Medical Supply Depots.

None of these agencies clearly recognized or understood the relationship of their functions relating to materiel for the Medical Department. As a result, there was considerable duplication and overlapping which was, of course, accompanied by constant confusion and delay caused by such indefinite division of authority.

It was evident that a consolidation of all supply functions under one authority would be required to correct the situation. Consequently, after studies conducted by the Office of the Special Assistant to the Surgeon General and by the Office of Management Engineer, specific and detailed recommendations were made for centralization of all planning and policy-making functions concerned with medical logistic support in a new Materiel Division to function as a part of the Bureau of Medicine and Surgery but to be located on the premises of the Naval Medical Supply Depot, Brooklyn, New York.

The steps pursued and the results attained in that survey are summarized in a brochure attached hereto as Appendix "A".

These recommendations were formalized and submitted to the Surgeon General who approved them with but minor changes on November 10, 1943. Thus the functional establishment and authority of a Materiel Division was directed on the same date the Medical Officer in Command, Naval Medical Supply Depot, Brooklyn, was assigned additional duty as Chief, Materiel Division.

### 2. Management Studies and Surveys.

Continued assistance in the conduct of management surveys was requested of and supplied by the Office of Management Engineer subsequent to the creation of the Materiel Division. One representative of the Manager Engineer devoted substantially a year to such studies since the establishment of the Division, and another was assigned for 30 days to study a specialized procedural problem. In addition, the services of the Head of the Personnel Branch, Administration Division, Bureau of Medicine and Surgery, were obtained for three months for a survey of the grade classifications of all group IVb civil personnel.



Management studies within the new Materiel Division have covered a variety of subjects. A series of management controls were developed. For instance, a field operating system, through which the Chief, Materiel Division is provided with up-to-date and complete statistical data and graphic interpretations of the most significant phases of the medical supply operation, including receipts, issues and inventory levels of stores, fiscal expenditures, work loads and back logs therein, and storage occupancy. A thorough review has been made of the methods of planning stores requirements and of reporting same to Office of Procurement and Material and War Production Board. The new methods evolved from this survey evoked favorable comment from Vice-Chief of Naval Operations and Office of Procurement and Material. Methods of handling purchasing details were investigated with a view to shortening the average procurement time. A survey of the classification grades and pay of all group IVb civil employees, at Naval Medical Supply Depot, Brooklyn, including the Materiel Division, held between June and September 1944, resulted in the upward reclassification of 154 out of 224, or 69 percent of the jobs surveyed.

These management studies were extended to all major field supply activities of the Medical Department. A management analyst studied at some length the operations of the Naval Medical Supply Depots at Oakland and Pearl Harbor as well as at Brooklyn, of the Naval Medical Storehouses at San Diego, San Pedro and Seattle, and of the Medical Sections of the Naval Supply Depots at Clearfield and Spokane. Uniform organizations were established in all Naval Medical Supply Depots. New procedures and forms were developed which enabled the depots and storehouses to prepare more accurate and legible invoices more rapidly and with a smaller number of personnel than heretofore.

It was contemplated that these management studies would be continued for the duration of the war.

### 3. Functional Organization.

(a) Introduction. The functional organization of the Materiel Division, promulgated at the time of the establishment of the Division, has been modified in certain minor respects as a result of further experience and of the foregoing management studies. The following sub-paragraphs outline the present functional organization:

(b) General. The terms "materiel" and "services" as used herein shall include all materiel and services with which the Medical Department of the Navy is concerned except the following: Personal, professional and educational services; communications services; printing and binding; provisions; subsistence services; travel; transportation of remains; tolls and ferriage; materiel and services for research projects; and materiel and services for plant construction, plant maintenance and repair.

The Materiel Division shall: (a) Establish basic policies governing the Medical Department's materiel activities; (b) develop specific materiel programs in support of naval operating plans;

(c) determine levels of stores to be maintained by Medical Department; (d) determine over-all requirements of materiel and services for such programs; (e) authorize requirements of individual activities for materiel and services, review field estimates, censor purchase requisitions; (f) initiate procurement of materiel; (g) make recommendations to Naval Medical Material Board of items to be added to or deleted from the Medical Department Supply Catalog; (h) develop initial outfitting lists; (i) develop specifications; (j) execute procurement details as necessary; (k) expedite deliveries of materiel from contractors; (l) maintain inspection standards and operate necessary laboratories; (m) control and record the distribution of medical stores; (n) correlate redistribution and disposal of excess Medical Department property; (o) develop policies and methods for stowage, assembly, issue, distribution, and salvage of stores; and (p) maintain books of account for appropriational obligations, receipts, expenditures and balances of medical stores of all depots and continental storehouses.

In order to accomplish these functions, the Materiel Division shall consist of: (a) An Office of the Chief of Division, (b) a Requirements Branch, (c) a Procurement Branch, (d) a Stores Control and Warehousing Branch, (e) an Accounting Branch, and (f) a Washington Office.

(c) Office of the Chief of Division. The Chief of the Division shall be responsible for the performance of all functions assigned to the Materiel Division, but shall adopt no major policies, methods or procedures without the approval of the Chief of the Bureau of Medicine and Surgery. In order to assist the Chief of the Division in the general administration of the Division, there shall be established the "Office of the Chief of Division" as part of the organization of the Materiel Division. This office shall consist of the Chief of the Division, the Assistant Chief of the Division, the Dental Advisor, and such other personnel as may be required to assist the Chief in the general administration of his duties.

(d) Requirements Branch. The Requirements Branch shall perform the functions listed in points (a) through (h) of sub-section (b). In order to accomplish these functions, the Requirements Branch shall consist of three sections; (a) A Materiel Plans-Advanced Base Section; (b) a Products (Monitor) Section; and (c) a Statistical Section.

The Materiel Plans-Advanced Base Section shall assist the Chief and Assistant Chief of the Division and the Head of the Requirements Branch in establishing basic materiel policies and specific materiel programs in support of naval operating plans, with particular regard to the scheduling of requirements by types of activities in terms of initial outfitting lists, functional components, and standard maintenance shipments; obtain, through the Planning Division, BuMed, operational and other logistic data necessary for detailed requirements planning by item and put these data in form for ready use by Products Section; develop and maintain initial outfitting lists, consulting with Planning Division, BuMed and Products Section in connection therewith; develop, revise, test and direct application of standards and usage rates for review of annual field estimates and supplemental budget requests; be responsible for the scheduling, serialization,



control, availability and assembly of G Functional Components, Fleet Hospitals, and other Advanced Base Units, in accordance with current directives; and develop and maintain the necessary follow-up techniques to insure meeting activity programs.

The Products (Monitor) Section shall assist the Chief and Assistant Chief of the Division and the Head of the Requirements Branch in establishing basic materiel policies and specific materiel programs in support of naval operating plans, with particular regard to programs for specific classes and items of materiel and services; prepare detailed estimates of materiel and services required for operation of existing Medical Department facilities, for any modifications thereof dictated by naval policy, and for prescribed reserves; act on requests for all specific items of materiel and services listed in annual field estimates and supplemental budget requests submitted by field activities, and advise Statistical Section on censorship of dollar totals of such field estimates; screen requests from field activities for procurement of services and non-listed materiel; upon approval of requirements for materiel and services by other divisions having requirements cognizance thereof, process procurement requisitions for such materiel to Chief of Materiel Division for Bureau authorization; develop and promulgate standards of censorship of requisitions for medical stores for use by depots and storehouses; determine time and quantity of purchase of medical stores as indicated by the over-all procurement program and by current data on stock on hand and rate of use; determine quantities of materiel on hand in excess of known future requirements and initiate recommendations for declaration as Bureau surplus; make recommendations to Naval Medical Material Board of items to be added to the Supply Catalog and render any professional assistance requested by this Board; advise the Materiel Plans-Advanced Base Section relative to the development and revision of initial outfitting lists; and review specifications for conformity with designated professional and military characteristics.

The Statistical Section shall provide statistical assistance as required by the Materiel Plans-Advanced Base and Products Sections; maintain a statistical check on the validity of the requirements planning by item of the Products section; develop and apply statistical techniques for evaluating and interpreting inventory positions, with particular respect to long and short supply; obtain from the cognizant monitors (and from the Specifications Section if basic materials are involved) and prepare in report form data relative to Medical Department requirements for materiel as requested by other divisions, offices, and agencies; convert unit requirements established by Products Section into dollar requirements and point out significant relationships between dollar values of stocks on hand, estimated requirements and rates of issue and use; receive and log annual field estimates and supplemental budget requests and recommend definitive action thereon to Materiel Plans-Advanced Base Section, indicating application of established standards and including recommendations of Products Section relative to requests for specific items of materiel.



(e) Procurement Branch. The Procurement Branch shall perform the functions listed in points (i) through (l) of sub-section (b). In order to accomplish these functions, the Procurement Branch shall consist of four sections: (a) A Specifications Section; (b) a Purchase Section; (c) an Expediting Section and (d) an Inspection Section.

The Specifications Section (now functioning as part of Army-Navy Medical Procurement Agency) shall develop in conjunction with the Products Section, Requirements Branch, the material specifications to be included in all bids and contracts; modify and promulgate specifications as necessary; maintain records of unit material requirements; prepare detailed plans for reduction in use of critical materials through modifications of specifications; ascertain that all specifications on bids and contracts are in compliance with current government regulations; make recommendations to proper governmental agencies for adoption of specifications; and maintain liaison re specifications with other offices, bureaus, boards, committees and agencies.

The Purchase Section shall, when requested by the Requirements Branch, carry out purchasing details required in connection with the procurement of materiel; maintain a file of acceptable bidders; prepare purchase requisitions and transmit them to appropriate agencies; tabulate bids, obtain recommendations of award from Requirements Branch and advise appropriate agencies as to awards; and maintain liaison with other governmental agencies and manufacturers relative to distribution of contracts and expediting of deliveries thereunder.

The Expediting Section shall maintain current information relative to scheduled and actual deliveries against all stock procurements; initiate remedial action when deliveries are or threaten to be delayed; assist contractors to locate sources of materials and in solving manpower problems; and prepare and send shipping instructions to contractors according to distribution plans of Control Branch.

The Inspection Section shall verify quantity, condition and marking of incoming materiel and make the laboratory tests necessary to ascertain that contract specifications have been met; test for acceptability preliminary and pre-production samples; inspect returned stores for usability; and maintain Physical, Chemical, Bacteriological and X-Ray Laboratories for these purposes.

(f) Stores Control and Warehousing Branch. The Stores Control and Warehousing Branch shall perform the functions listed in points (m), (n) and (o) of sub-section (b). In order to accomplish these functions, the Stores Control and Warehousing Branch shall consist of three sections; (a) An Inventory and Stores Location Section; (b) a Surplus Property Section and (c) a Warehousing Section.

The Inventory and Stores Location Section shall develop and maintain detailed records of receipts, issues, balances on hand and scheduled deliveries of materiel at the Medical Supply Depots and Continental Storehouses; develop and maintain summary inventory records of medical stores in

other field activities as necessary for effective requirements planning and control of distribution; direct the periodic reconciliation of book balances of stores on hand with physical inventories; furnish summary inventory data from its records to Requirements Branch as needed for requirements planning purposes; forecast withdrawals of stores from particular Medical Supply Depots and Storehouses according to the requirements and geographic locations of requisitioning activities and direct the distribution of stores among the various depots and storehouses to meet the needs thus estimated; determine the major controlling depot to which each contract shipment shall be routed; determine in accordance with operational plans the particular depot or storehouse from which each activity's requisitions shall be filled; and order the redistribution of stores among depots and continental storehouses as required to maintain desired stock levels.

The Surplus Property Section shall direct the applications to Medical Department activities of Federal and Navy Department policies with respect to redistribution and disposal of surplus property; correlate the redistribution and disposal of excess property in field activities; ascertain, prior to the release of new purchase directives, the availability of surplus stores in other government agencies; and carry out the disposal of BuMed surplus property by declaration or transfer to other offices or agencies.

The Warehousing Section shall make studies, develop techniques, and when directed make surveys, with respect to storage, space requirements and methods of stowage and assembly of materiel; recommend action and prepare directives for the implementation thereof in Medical Supply Depots and Storehouses; and advise the depots and storehouses generally in such matters.

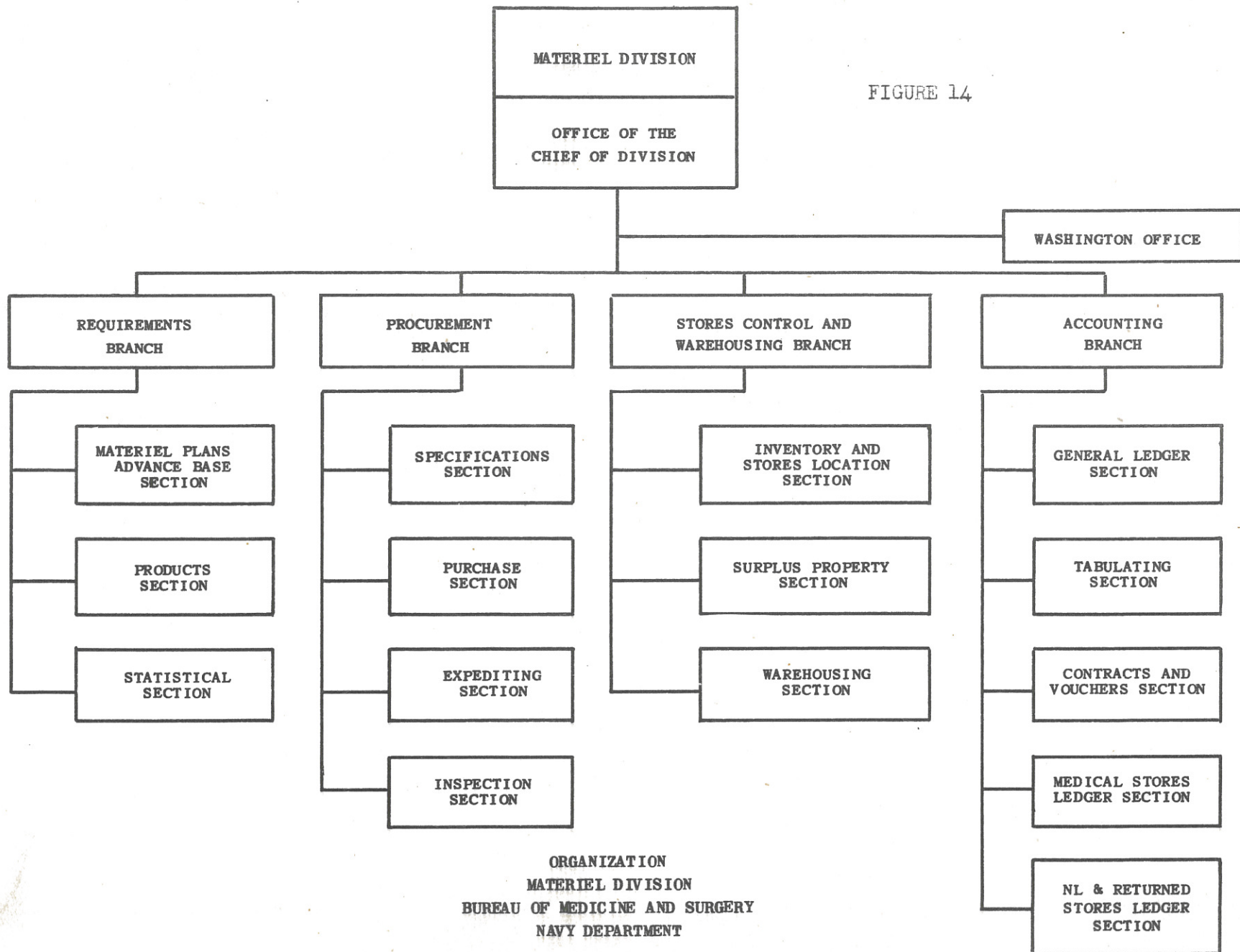
(g) Accounting Branch. The Accounting Branch shall perform the functions listed in point (p) of sub-section (b). In order to accomplish these functions the Accounting Branch shall consist of five sections; (a) A General Ledger Section; (b) a Tabulating Section; (c) a Contracts and Vouchers Section; (d) a Medical Stores Ledger Section, and (e) a Non-listed and Returned Stores Ledger Section.

The General Ledger Section shall maintain ledger records of all appropriational allotments, obligations and expenditures for materiel, maintain ledger records of issues broken down by classes of activities and classes of materiel; maintain property accounts covering materiel in depots and storehouses; prepare records of average annual issue of each Supply Catalog item to each type of activity; and prepare, as required, financial, property and usage reports derived from its records.

The Tabulating Section shall perform the electric accounting machine operations which will provide the General Ledger and Medical Stores Ledger Sections with the tabulated statements of receipts and expenditures of stores required for the maintenance of their accounts and for the preparation of financial reports.



FIGURE 14







The Contracts and Vouchers Section shall maintain records of open purchase requisitions, purchase orders and contracts for procurement of materiel; verify contract values; check contractors' invoices against contracts and receiving records; and prepare public vouchers for payment of such invoices.

The Medical Stores Ledger Section shall maintain a register of Medical Stores Invoices issued by depots and continental storehouses; verify invoices and prepare expenditure vouchers therefrom; maintain ledger records of receipts, issues and balances of each item of medical stores; calculate the average cost of each item of stores; and maintain a Standard Unit Price List for all issuing activities.

The Non-Listed and Returned Stores Ledger Section shall maintain ledger records of receipts, issues and balances of non-listed medical materiel and returned stores, and prepare as required and maintain records of surveys of medical stores from depots and continental storehouses.

(h) Washington Office. The Washington Office of the Materiel Division shall coordinate the functions of the Materiel Division with those of the other divisions of the Bureau of Medicine and Surgery and represent the Division in necessary personal contacts with the Chief and Assistant to Chief of the Bureau and with other divisions, bureaus, offices and agencies in Washington and contiguous territory.

A diagram of the functional organization is shown in figure 14.

### III NAVAL MEDICAL MATERIAL BOARD

Prior to December 12, 1942 the consideration of additions and deletions from the Supply Catalog of the Medical Department, U.S.N. and the evaluation of new supplies and equipment for naval use was a mixed function involving several divisions of the Bureau of Medicine and Surgery and the Naval Medical Supply Depot, Brooklyn, New York.

As is almost invariably the case the scattering of the same or related bits of function among activities that are not well correlated administratively or geographically results in a poor quality of endeavor.

To correct this state of affairs the Surgeon General established the Naval Medical Material Board: (a) To examine and pass upon such new drugs, chemicals, inventions and devices, related to medical, surgical, dental, hospital, and field equipment and supplies, as may be brought before the Board; (b) to have performed such tests, analyses, studies and trials as may be required to arrive at a sound basis of judgement regarding the suitability of the materials under investigation for use by the Medical Department of the Navy; (c) to consult with the Research Division of the Bureau concerning problems to whose solution research methods are applicable and to be governed in such cases by the recommendation of the Research Division; (d) to consult with and keep the

cognizant divisions of the Bureau advised of developments in supplies and equipment with which those activities are concerned - - - the (Bureau) divisions to cooperate with the Board in solving problems of mutual interest; (e) to classify each item recommended for procurement as: I - Supplementary Catalog; II - Service Trial; (f) to recommend the basis of issue of each item, the unit cost and the total quantity required for original stock and replacements; (g) to submit reports of its findings and recommendations to the Surgeon-General for his information and decision.

The Medical Officer in Command, Naval Medical Supply Depot, Brooklyn, was appointed as chairman and was directed to designate the additional personnel necessary for the board to function.

The personnel, as of July 1, 1945, consisted of the Chief of the Materiel Division, BuMed; the Assistant Chief of the Materiel Division; the Executive Officer, Naval Medical Supply Depot, Brooklyn; the Head of the Procurement Branch, Materiel Division; the Monitor for Classes 2 and S2; a representative of the Marine Corps Medical Coordination Branch, BuMed; the Dental Advisor to Chief of the Materiel Division; the Monitor for Classes 1 and S1; the senior officer of the Materiel Plans-Advanced Base Section; the Head of the Washington Office, Materiel Division; the Head of the Accounting Branch, Materiel Division; the senior officer of the Surplus Property Section; the senior officer of the Inspection Section, Materiel Division; and the Secretary.

In addition to the regular members, representatives from the Bureau of Supplies and Accounts, Bureau of Yards and Docks, Bureau of Ships, Bureau of Ordnance, Bureau of Aeronautics, the U. S. Marine Corps, the Army and the British Admiralty are regularly invited to participate in the Board's deliberations.

From December 12, 1942 to July 1, 1945 reports have been made to the Bureau of Medicine and Surgery on 801 items referred for investigation. The financial obligations, incurred in the initial procurement of items approved by the Bureau for addition to the Supply Catalog or for trial and report on, amount to \$2,786,889.

#### IV OPTICAL REPAIR UNIT

##### 1. History.

Prior to the present war the purchase of eyeglasses for Naval personnel at the expense of the government was not authorized except in cases of injuries in acts of duty and for general courts-martial prisoners without funds. In 1942, as full mobilization of American forces proceeded, more and more persons with subnormal vision were being appointed, enlisted, and inducted into the armed services. As a result, a program of optical service at government expense was authorized under the Naval Appropriation Act. The authority for this service, however, as contained in the appropriation "Medical Department", allowed the issue, repair, and



replacement of eyeglasses for naval personnel only in combat areas and at Advanced Bases so located that commercial optical facilities were not readily accessible. Later, in August 1944, the authority was modified, after approval by the Bureau of Budget, the House Appropriations Committee, and the Secretary of the Navy to provide optical service for all naval personnel on active duty, either within or beyond the continental limits of the United States.

The original provision that eyeglasses should be issued or repaired at government expense only in combat areas and at Advanced Bases led to the formation of Navy Optical Repair Units, for it was only through the medium of such units that navy personnel could be served in the isolated areas where optical service was authorized under the Naval Appropriation Act.

## 2. Types of Units.

Two types of units, designated as Mobile and Base were formed. The mission of these units was as follows: (a) Primarily, to provide emergency spectacle replacement and repair service without charge to naval personnel on duty at places not accessible to civilian facilities; (b) secondarily, the initial supplying, without charge, of urgently needed corrective spectacles to naval personnel under like circumstances.

The distinction today between the two types of units is largely one of capacity, although originally there was difference in function as well. The Base Unit, designed for semi-permanent operation, has always carried complete equipment for everything except lens surface grinding and has had a capacity for producing 450 to 500 complete pairs of glasses a month. The Mobile Unit, on the other hand, was designed as a more or less portable outfit, utilizing pre-edged lenses and carrying a minimum of equipment, for it was expected that these smaller units would be shuttled from one outlying location to another according to the demands for service. As it turned out, however, the volume of work was so great, even in the forward areas, that once a Mobile Unit reached a particular destination it remained in operation for several months and the limited equipment proved to be something less than an advantage. As a result these units were redesigned to permit a function similar to that of the Base Unit, but for the sake of easy packing and quick movement the capacity was restricted to about 250 complete pairs of glasses a month.

## 3. Planning.

The entire program for rendering a service of this kind to Naval and Marine personnel was undertaken with no previous experiences to serve as a guide and plans had to be developed and revised according to lessons learned as the units got into operation.

The first units were organized early in 1943. In March of that year personnel consisting of thirty-four hospital corpsmen, with varying degrees of optical experience, were assigned to the U.S. Naval

Medical Supply Depot, Brooklyn, where the officer in charge of the new Optical Activity had undertaken procurement of necessary equipment, and was in the process of developing operational plans for the units. Since most of these men were quite young, with only a theoretic knowledge of various optical shop operations, a training course was instituted immediately, and after eleven weeks of instruction in mechanical optics it was possible to select an adequate number of qualified men for eight units.

The Optical Repair Units were planned originally for operation beyond the continental limits, and the first eight units were detached for foreign service on July 9, 1943. They were designated for overseas locations in remote areas where the service was reported to be most urgently needed. These areas were in the South and Southwest Pacific where American Forces had begun to push the Japs back up through the steamy jungles of New Guinea and the Solomon Islands.

The entire program for rendering optical service to Naval and Marine personnel in the various theatres of war was, of necessity, based on guess work. There had never been any program like it in this or any other war. The experience of the Army could not be used as a guide because, in the first place, the Navy units were to function in an entirely different way, and, in the second place, the visual requirements for enlistment in the Navy, at the time, were not the same as those for the Army. Thus, plans had to be developed from scratch, with revisions made according to lessons learned as the units got into operation. For this reason the officer, who had organized the units, developed the operational plans for them, and trained the personnel, went out with the first eight units, got them established in various locations, and then worked with them until dependable experiences had been gained.

Two Base Type Units in the South Pacific were the first to be established, one at a U.S. Naval Mobile Hospital in August 1943, and the other at a U.S. Naval Base Hospital early in September. By mid-September three of the mobile units were in operation in the forward areas of the South Pacific. A few weeks later, a fourth Mobile-Type Unit went into operation in the South Pacific and the two remaining units, one a Base and the other a Mobile, were established in the Southwest Pacific in late October.

#### 4. Type of Service Rendered.

The types of Naval organizations serviced by the first units varied according to where each happened to be located. Some units serviced a high percentage of ship's crews while others served shore establishments almost exclusively. As an average for the entire group, however, 69% of the service rendered was for personnel operating ashore, Marines, Sea Bees, Hospital Corpsmen and Repair and Maintenance groups; while 31% of the service was for personnel attached to ships. Of all personnel served, both from ships and from shore activities, 86.5% were enlisted men.



A very small fraction of the total work done by the units was of a repair nature, a fact which undoubtedly is contrary to civilian optical experiences in the States. Over a six month period, 85% of the jobs produced by all units were complete glasses (frame and lenses), 8.3% were new lenses inserted in the old frame, and 6.7% were either new frames or miscellaneous repair. The high percentage of complete replacements as compared to relatively few repairs and single lens replacements was due to the fact that glasses were either thoroughly demolished, or lost, especially in the forward areas.

It is doubtful that a program of spectacle repair and replacement service anywhere could have been more urgently needed than in the South and Southwest Pacific. The areas served by the units comprised several groups of primitive, jungle covered islands. With the exception of native villages there were only three or four towns in the entire area and few of these amounted to much more than a cluster of fifteen or twenty low, dusty buildings, baking in the tropical sun like a batch of hot biscuits. The few stores were merely trading shacks which sold cloth and such bare necessities of life as could be stored without spoilage in the intensely hot and humid climate, so even in peace time there was no more chance of obtaining optical service than of getting a manicure or seeing a movie.

The operation of optical units in such God-forsaken spots, isolated by thousands of miles of ocean, provided excellent experience for future planning. The Base-Type units required no change in design but their basic stocks were increased because of the heavy volume of work and because of delays in receiving replenishments. The Mobile Type units were provided with supplemental equipment and their stocks were expanded to an extent equal to the job they had to do.

Four months after the first unit had begun to render service in the South Pacific, reserves of hospital corpsmen were being developed and additional units were being assembled as quickly as possible. In late December 1943 two mobile and one base unit were operating in the American Defense area and another mobile had been sent into the European-African theatre. In February 1944 a Base Type unit was installed on one of the newer hospital ships and in March a Mobile Unit was established at a North Pacific base. Another Base and another Mobile Unit were detached for duty in the Pacific in April, and during the summer of 1944 four additional Base Units were established, two within the continental limits of the United States, one in the European theatre and one in the Pacific. In January 1945, two more units, one Base and one Mobile were sent into the Pacific where conditions naturally imposed a greater need for service than in other theatres. By May 1945, a Base Unit had been installed on each of the six (6) new Hospital Ships of the Tranquillity class.

Since their establishment in 1943 a total of 43 Optical Repair Units have been assembled and two lens grinding plants have been established in the Western Pacific to augment the function of the Units.



## 5. Naval Spectacle Program.

When, in 1944, the authority for furnishing eyeglasses and eyeglass repairs was modified to include naval personnel on active duty within the continental United States, a program of optical service known as the Navy Spectacle Program was developed. Under this program, certain Naval Hospitals and Dispensaries located at or near Naval Training Centers, Navy Yards, Bases and Marine Camps were designated as Optical Dispensing Agencies, and Navy Optical Dispensing Units were established accordingly.

Unlike the Navy Optical Repair Units at overseas locations, the Dispensing Units were not designated to fabricate eyeglasses, the reason being that the equipment required was too critical to permit procurement on a large scale. The actual production of eyeglasses was performed by various optical wholesale laboratories under Bureau of Supplies and Accounts contracts. When authorized personnel requiring service presented a properly signed request, or a prescription, at one of the designated hospitals or dispensaries, personnel of the Dispensing Unit would take facial measurements, prepare an order, listing all the information necessary to the type of optical service needed, and forward the order to the nearest contractor optical laboratory. Upon completion, the eyeglasses would be returned to the Dispensing Unit where final adjustment (to the wearer's face) and delivery were made. Personnel from visiting ships were permitted to obtain optical service from the designated hospital or dispensary nearest to port.

The detailed plan for operating and administering the Navy Spectacle Program was approved in November 1944 and a course of instruction in eyeglass dispensing was established immediately at the Naval Medical Supply Depot, Brooklyn, New York. Between December 1, 1944 and February 15, 1945, two classes of 50 hospital corpsmen each had completed the course of instruction and had been assigned in teams of two hospital corpsmen each to naval hospitals and dispensaries initially designated as Optical Dispensing Agencies. After February 15, 1945 additional groups of hospital corpsmen were assigned the course of instruction at the Naval Medical Supply Depot, Brooklyn, in smaller classes to provide personnel for dispensing duty at naval hospitals and dispensaries which were subsequently added to the initial list of Optical Dispensing Agencies.

The Navy Spectacle Program was officially initiated on March 15, 1945, with contracts effective as of that date. Fifty hospitals and dispensaries were initially designated to provide optical service under this program and within the first three months of its operation, nine additional activities had been added to the initial list. It was expected that such other naval hospitals and dispensaries as could justify the need would continue to be added to the list of designated agencies from time to time.

## V ADVANCE BASE UNITS

(a) Introduction. The various types of advanced base units of which the Naval Medical Supply Depot, Brooklyn, assembled the Medical Department components included "Roses" shipment, "Lions", "Cubs", Mobile Hospitals, Fleet Hospitals, G-Functional Components, Medical Research Units, Corps Evacuation Hospitals, Special Augmented Hospitals and Medical Supply Storehouses, extra-continental. In addition to assembling the various types of units, the Initial Outfitting Lists were prepared by the Depot.

### 1. "Roses", "Lions" and "Cubs".

In 1941 a directive was received to outfit two Destroyer Bases and two Seaplane Bases for the Atlantic Islands obtained from the British under lend-lease. This material was assembled at Quonset, Rhode Island, for Atlantic shipment. With the advent of the Pacific War, this material was immediately diverted to that theater and became one of the first Advance Bases, "Roses".

During 1942, the Chief of Naval Operations began to develop the "Lions" and the "Cubs" which had medical facilities of 600 and 200 beds respectively. Each Bureau was assigned cognizance over its technical material and developed its own Initial Outfitting Lists.

### 2. Functional G-Components.

During the first half of 1943, the development of Initial Outfitting Lists for the various Advanced Base Components had crystallized and the medical components were designated as G-Functional Components. At this time, the Bureau of Medicine and Surgery further experimented with modification of the components and of the individual Field Medical Units.

During the late spring of 1943, Medical Department material began to be pre-assembled for the G-Components. In June 1943, Chief of Naval Operations published the first Advance Base Catalog of Functional Components and in September it was directed that all Bureaus pre-assemble functional components in Advance Base Sections of Naval Supply Depots. Shortly thereafter, Chief of Naval Operations directed that the Bureaus prepare to place all Initial Outfitting Lists on IBM cards. Later in December, Chief of Naval Operations directed the Bureau of Supplies and Accounts to take over the printing and publishing of all Advance Base Initial Outfitting Lists and gave all Bureaus a deadline of March 1944 to prepare such lists.

A list of the Advance Base "G" Functional (Medical Department) Components, together with each component's individual cost, follows:



G-2	600 Bed Dispensary.....	\$116,436.88
G-4	200 Bed Dispensary.....	44,810.13
G-5	100 Bed Dispensary.....	30,403.61
G-6	100 Bed Dispensary (Mobile).....	14,883.03
G-7	50 Bed Dispensary.....	17,221.31
G-8	25 Bed Dispensary.....	8,857.97
G-9	10 Bed Dispensary.....	5,658.93
G-10	10 Bed Dispensary (Mobile).....	3,206.94
G11A	First Aid Sub-Dispensary .....	243.72
G-13	Sub-Dispensary-Dental.....	2,142.82
G-14	Sub-Dispensary-Dental (Mobile).....	1,641.94
G-15	Sub-Dispensary-Dental-Prosthetic Lab.	5,469.98
G-16	Sub-Dispensary-Dental-Prosthetic Lab. (Mobile).....	2,837.38
G-17	Malaria Control Component.....	581.73
G-18	Epidemiology Component.....	1,754.41
G-19	Malaria and Epidemic Control Component (1 G-18 plus 2 G-17's).....	2,917.87
G-20	Optical Repair Component - Base Type.	10,996.80
G-21	Optical Repair Component - Mobile Type	2,636.00
G-22	Rodent Control.....	379.35

### 3. Mobile Hospitals.

Mobile Hospital No. 1, conceived in August 1940, assembled during September and October, was commissioned October 15, 1940, and sailed for Guantanamo Bay, Cuba, on October 25, 1940.

Mobile Hospital No. 2 assembled in the summer of 1941, was commissioned August 19, and shipped to Pearl Harbor in the fall of 1941. It was established 12 days before the "Day of Infamy", December 7, 1941.

Mobile Hospital No. 3, procured and assembled immediately after the declaration of war, was commissioned March 7, 1942. It was the first Mobile Hospital shipped to the Pacific after war was declared.

Mobile Hospitals Nos. 4 through 8 were procured during the spring and summer of 1942. All of these hospitals used the "panel type" of buildings made by the Tennessee Coal and Iron Company, subcontractors for U. S. Steel Export.

In the first part of February 1943, a directive was received to procure and assemble material for the expansion of Mobile Hospitals Nos. 2, 6 and 8, from 500 to 1000 beds.

Nos. 9 through 12. On December 1, 1942 the Bureau of Medicine and Surgery directed that four (4) 500 bed mobile hospitals be procured and assembled. These were numbered 9 through 12.



In the latter part of January 1943, after procurement for the foregoing hospitals, 9 through 12, had gotten under way, a directive was received to expand Mobile Hospitals Nos. 9 through 12 to 1000 beds. New work sheets were developed on this basis.

During early February 1943, an additional directive to procure and assemble material to expand Mobile Hospital No. 2, No. 6 and No. 8 to 1000 beds was received. This caused another revision of the work sheets and new procurement had to be initiated. To facilitate the procurement contracts were amended in the majority of instances to provide for the additional material.

Mobile Hospitals 9 through 12 were the first to use the "Task Force Type" buildings manufactured by the Southern State Iron and Roofing Company and the portable cold storage building purchased from the Shaer and Turner Engineering Company of Boston.

#### 4. Fleet Hospitals.

In June 1943, a directive calling for ten (10) more 1000 bed hospitals, designated as Mobile Hospitals Nos. 13 through 22, was received.

In August 1943, the Mobile Hospitals were redesignated as Fleet Hospitals, with serial numbers starting with 101.

Fleet Hospital No. 113 was assembled at the Mechanicsburg Naval Supply Depot to meet an overseas shipment date of September 15, 1943 and was eventually established as the U. S. Naval Receiving Hospital, San Francisco, California. This was the last hospital to be completely outfitted by Bureau of Medicine and Surgery.

In the fall of 1943, criticisms of the equipment supplied to Fleet Hospitals was received from the South Pacific. Thereafter the Commander, South Pacific, established a board to standardize Fleet Hospitals. Its findings were officially transmitted to the Materiel Division, Bureau of Medicine and Surgery in March 1944. After preliminary discussions between Materiel Division, Bureau of Medicine and Surgery, Bureau of Yards and Docks and Bureau of Supplies and Accounts, it was agreed that Bureau of Yards and Docks would develop plans for all of the remaining Fleet Hospitals, providing Bureau of Medicine and Surgery would submit the preliminary architectural drawings.

An understanding was reached among Bureau of Medicine and Surgery, Bureau of Yards and Docks and Bureau of Supplies and Accounts that Fleet Hospitals 114, 115 and 116 would be furnished all available non-medical material in Bureau of Medicine and Surgery's stocks and that Bureau of Yards and Docks and Bureau of Supplies and Accounts would furnish such other material as would be required on a list submitted by

Bureau of Medicine and Surgery. They further agreed that they would take over all remaining non-medical material in stock in Bureau of Medicine and Surgery storehouses over and above the requirements of Fleet Hospitals 114, 115 and 116, which were not in excess or surplus of those Bureau needs.

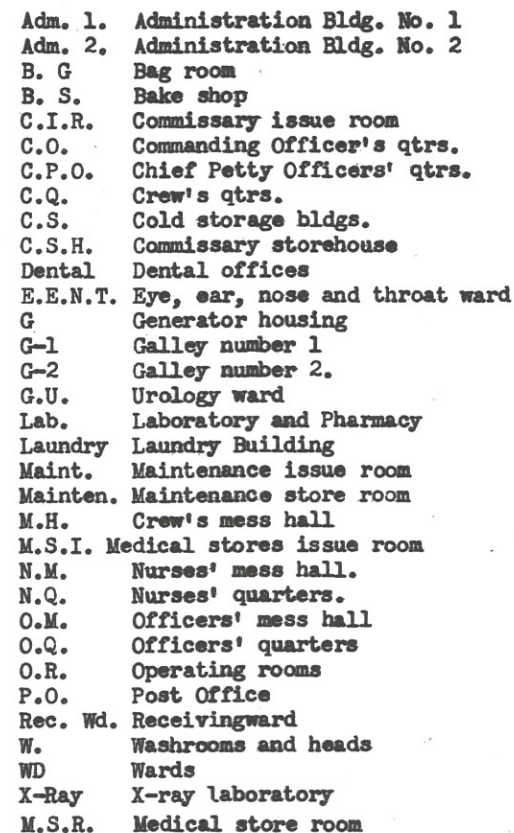
Fleet Hospital 114 consisted of three echelons; first, second and standardization.

Fleet Hospitals 115 and 116 were 1500 beds and consisted of three (3) 500 bed echelons and a standardization echelon.

In round numbers, the material for a Fleet Hospital designed to care for 1000 patients costs \$500,000. Its staff is comprised of 90 officers which includes 32 Medical, 4 Dental, 6 Hospital Corps, 2 Supply Corps, 43 Nurses, 2 Chaplains and 1 civil engineer, and 753 enlisted men. The total physical equipment requires a site of approximately twenty five acres. A tentative layout of such a hospital is shown in figure 15. Formerly, one hundred and seventy prefabricated Task Force Type insulated steel buildings of a standard 20 x 50 foot size were provided for housing staff personnel, patients and equipment. This is equivalent to a building 8,500 feet long and 20 feet wide. Detailed instructions and tools for erecting the buildings, installation and operation of equipment are supplied. Facilities for water purification, softening, storage and distribution are provided. Likewise, toilet, commissary, laundry, automotive transportation, fire fighting, light and power, refrigeration, garbage disposal, etc. There is a complete outfit of medical and surgical supplies including X-ray, laboratory and dental items. The equipment is adequate for all basic needs.

The completed plans for Fleet Hospitals 117 to 122, inclusive, call for combinations of Task Force Buildings and standard Advanced Base Quonset type buildings of several dimensions. Preliminary architectural, mechanical and electrical drawings were completed in May 1945. The total cost of all buildings, equipment and supplies is estimated at \$1,500,000.

### TENTATIVE LAYOUT FOR 1000 BED MOBILE HOSPITAL





## 5. Medical Research Units.

In January 1944 the Surgeon General directed that a medical research unit be developed for the Advanced Bases. Initial outfitting lists and plot plans were completed in June 1944 as a joint enterprise between the Materiel Division, Bureau of Medicine and Surgery, and the Medical Officer in Command of Medical Research Unit 2.

Large quantities of non-listed material were procured and assembled. Among these non-standard items were one snail laboratory, six sheep, three-hundred white mice, ninety chickens, guinea pigs, twenty-eight cages, animal food specially prepared for six months supply, two aeroplanes, motor vehicles of various kinds, three tons of insecticide and other technical supplies and equipment were shipped late in 1944 to an advanced base overseas.

The animals, bred at the Rockefeller Institute of Medical Research, are being used for extensive laboratory tests and scientific experiments on certain tropical diseases such as malaria, filariasis, yellow fever, dengue, typhus, etc. First of its kind to go overseas, this unit is under the command of Captain Thomas M. Rivers, M.C. U.S.N.R.

## 6. Corps Evacuation Hospitals and Special Augmented Hospitals.

In June 1944, Captain W. D. Small, M.C., U.S.N., of the Commander in Chief, Pacific Fleet's staff came to Materiel Division, Bureau of Medicine and Surgery with a directive to fit out three (3) Corps Evacuation Hospitals and four (4) each, 200 bed and 400 bed Special Augmented Hospitals; all to be ready for overseas shipment on a special mission by August 1, 1944.

These hospitals consisted largely of field type equipment and were so packed with the exception of certain bulk supplies.

## VI ELECTRO-MEDICAL AND DENTAL REPAIR UNITS

### 1. Establishment.

Based upon the critical need for repair of electro-medical and dental equipment in the forward areas, and the experience gained from the repair and salvage of this type of equipment at Naval Medical Supply Storehouse No. 11, the Chief of Materiel Division, in a memorandum to the Surgeon General on February 20, 1944, recommended the establishment of Electro-Medical and Dental Repair Units at Naval Medical Supply Depot, Pearl Harbor, T.H. and Naval Medical Supply Storehouse No. 11. These units were to be under the Medical Officer in Command of Naval Medical Supply Depot, Pearl Harbor, T.H. The personnel of each was to consist of three (3) electro-medical repairmen, two (2) dental repairmen and one (1) officer in charge.

The Surgeon General, in a confidential letter dated 20 March 1944, authorized the establishment of a unit at Naval Medical Supply Depot, Pearl Harbor, but held in abeyance authorization for the unit at Naval Medical Supply Storehouse No. 11, until it was requested by the area commander.

In October 1944, an Electro-Medical Repair Unit was established at Naval Medical Supply Depot, Brooklyn, for the repair of equipment being returned from "roll-up" of activities.

In April 1945 a unit was established at Guam as a subsidiary of the unit at Naval Medical Supply Depot, Pearl Harbor. Other units will be established as soon as men and material are available and requirements in the forward areas arise. A unit for Naval Medical Supply Depot, Oakland, California, is waiting men and material.

Resume of work performed by various units since establishment follow:

NMSD, Pearl Harbor

1168 repairs  
Installations - 96

NMSD, Brooklyn

408 repairs

Guam

183 repairs.

TOTAL - 1855

2. Catalog of Spare Parts.

With the official establishment of Repair Units, work was immediately started upon a Catalog of Spare Parts. Various manufacturers cooperating in furnishing lists of parts of equipment they had previously furnished the Navy. They also supplied available line drawings, blue prints, prices and estimations of the quantity of parts per 100 pieces of equipment that they believed necessary to maintain and repair their equipment for a period of one year.

These data were correlated and put into form for identification and cataloging. The catalog was printed and orders initiated for a supply of parts in August 1944. At that time the catalog had approximately 2400 items listed under Classes R4- and R5-. Since the first printing, the catalog has been constantly revised until it now contains approximately 3600 items.



### 3. Schools.

In February 1945 a recommendation was made by the Chief of the Materiel Division for the establishment of a school at Naval Medical Supply Depot, Brooklyn, for the training of Electro-Medical and Dental repairmen. A school for the training of dental repairmen was established at Naval Training Center, Bainbridge, Maryland, in March 1945.

A school for electro-medical repairmen was established at Naval Medical Supply Depot, Brooklyn; the first class starting on July 16, 1945. The course, of four (4) months' duration, is quite comprehensive. Men completing the course will be fully qualified to repair and service all types of medical equipment. At present there are 7 officers and 17 men undergoing instruction. Probably a minimum of 30 officers and 100 men should be trained for this type of work.

### 4. Procurement.

Although orders for parts were placed with manufacturers in September and October 1944, delivery did not start before January 1945. In the meantime, the unit at Pearl Harbor had been working under severe hardship because of lack of parts, but reports indicated that a great amount of work was being accomplished under the able leadership of Commander W. N. Montgomery. His most urgent need was for competent repairmen.

## VII MISCELLANY

### 1. Penicillin.

On July 2, 1943, twenty ampuls of Penicillin Sodium were received at the Naval Medical Supply Depot, Brooklyn. During the entire month of July 1943, the total receipt was 920 ampuls of 100,000 Oxford units each, or a total of 92,000,000 Oxford units. By May 1945, with the tremendous expansion of production facilities and the gigantic demands for this drug by the Navy throughout the world, receipts reached a total of 300,000 vials of 200,000 Oxford units each or 60,000,000,000 Oxford units.

In the early months, the problem arose of maintaining an equitable distribution of the limited quantities then available. At first, the material was practically all shipped to Naval Hospitals in amounts designated by the Research Division of Bureau of Medicine and Surgery. Automatic shipments were made monthly to overseas hospitals.

By February 1944, production became sufficient for a more general distribution and control by the Research Division was withdrawn. Any activity was permitted to order penicillin on Form 4 requisition or by dispatch but was required to supply a statement of the urgency of its need. In order to edit these requisitions, the Chief of Materiel



Division appointed a board consisting of the Control Officer and the Monitor for Class S1 items to evaluate all requests in the light of urgency of need and the current stock. These requests were referred, day or night, to at least one member of the board.

In evaluating these requests consideration of expiring potencies was necessary. As the dating period was only three months, very short potency material was at times issued to activities showing very little urgency for the material in order to prevent survey due to expiration of potency. However, as more highly purified penicillin became available, there was a gradual lengthening of the dating period and now most manufacturers have been permitted by the Food and Drug Administration to show a dating period of 18 months. This has obviated the early difficulties in distribution caused by a drug with a rapidly expiring potency.

During the early period, numerous frantic requests were received from civilians for this "wonder drug" as the entire production was at that time allocated to the armed forces. However, a limited quantity was soon allocated by War Production Board for urgent civilian needs under the cognizance of Dr. Chester Keefer of Boston, Massachusetts. Therefore, all such requests were referred to him.

As production increased, stocks were set up at other depots beside Brooklyn. Overseas storehouses were also provided with this material.

New uses of penicillin for syphilis and sulfa-resistant gonorrhea greatly increased demands, but increased procurement and production made stock available for all reasonable needs. In order to supply adequate quantities for combatant use, large amounts were sent to forward areas on automatic shipments, such as the block loads.

While procurement increased from 920 of the 100,000 unit vials to 300,000 of the 200,000 unit vials per month, the cost dropped from \$18.00 per 100,000 units to \$1.00 per 200,000 units, that is, the cost as of July 1, 1945 is about 3 per cent of the cost of the original purchase.

Penicillin, the contracts for which in slightly over two years totalled over seven million dollars, is only one example of many new therapeutic agents procured and distributed since the war began.

## 2. Courses of Indoctrination and Instruction.

Since December 7, 1941, several different courses of indoctrination and instruction have been established at Naval Medical Supply Depot, Brooklyn, for certain officer and enlisted personnel assigned to new Fleet Hospitals, Hospital Ships, Transports, Combatant ships, Medical Supply Depots, Medical Supply Storehouses, Advance Base Units, Optical Repair Units and Electro-Medical-Dental Repair Units. These courses include the following:

(a) The course for Fleet Hospital personnel covers the major elements of the plotting, erection, supply and operation of the plant and the organization pertaining thereto;

(b) The course for the personnel of Hospital Ships, Transports and Combatant Ships includes a study of the supplies and equipment under assembly and the determination of changes indicated therein; also a review of the major elements in the echelons of medical supply and the reasons therefore;

(c) The course for Medical Supply Depot and Storehouse personnel involves supply, operation and maintenance;

(d) For Advance Base Units - familiarization of the personnel with the commissioning outfit and procedures involved in resupply;

(e) For the personnel of the Optical Repair Units, a study of the supplies and equipment; practical work in the shops of the Colonial Optical Company, New York City; technique of repair; methods of resupply and customs of the Naval Service;

(f) For the personnel of the Electro-Medical and Dental Repair Units, practical work in the salvage, servicing and repair of X-ray and other electrical equipment; methods of resupply and customs of the naval service.

### 3. Reviewing and Editing of Requisitions.

The review and editing of NavMed Form-4 requisitions was carried out by the Medical Officer in Command, Naval Medical Supply Depot, Brooklyn in 1941, except that those for dental items were reviewed by the Dental Advisor. The increase in volume of such requisitions caused the assignment of one medical officer for this task who handled all items except dental.

Later, the editing of all NavMed Form-4 requisitions was assigned to the Monitors, each one of whom was responsible for the items under his cognizance.

When decentralization of the medical supply system occurred in November 1943 only those requisitions from the territory which Naval Medical Supply Depot, Brooklyn, served were edited. The one exception were the requisitions for non-listed material.

Later, in May 1945, the reviewing of standard items was transferred from the Monitors Section, Materiel Division, to a special section of Naval Medical Supply Depot, Brooklyn. Requisitions for non-listed items were not transferred and are still reviewed by the Monitors.



The reviewing and the editing of these requisitions is a highly important task, the purpose of which may be summarized as follows:

(a) The rationing of critical items to the best advantage of all concerned.

(b) The reduction of amounts requisitioned when they are obviously in excess of needs; contrariwise, the increase of amounts known to be inadequate.

(c) The deletion of items known to be unavailable, and, in their place, the substitution of available similar items.

(d) The deletion of items unsuitable for the purpose intended.

(e) The deletion of items not ordinarily supplied to the requisitioning activity, for instance, research instruments or appliances requisitioned by a non-research activity.

(f) The deletion of items supplied by another Bureau.

(g) The correction of errors in stock numbers, item titles, units of quantity, packaging, etc; this to insure the issue of proper items in proper amounts.

(h) Written explanation of any modification of a requisition.

#### 4. Supply Catalog, Medical Department, U.S. Navy.

The current Medical Department Supply Catalog, U. S. Navy, was authorized in 1940 and revised in 1943. This catalog lists all items routinely stocked by the Medical Department for general issue to Medical Department activities. It is modified by monthly changes reflecting the addition of new items considered necessary to care for the health of Naval personnel and the deletion of items considered obsolete due to the advancement in medical science or of critical material content no longer available under current war conditions.

Like almost all activities of the Medical Department it has undergone drastic modification.



5. Cost of Medical Department Commissioning Outfits.

The initial cost of some of the commissioning outfits as supplied by the Medical Department follow:

<u>Medical Department Commissioning Outfits</u>	<u>Initial Cost</u>
A Fleet Hospital.....	\$500,000.00
A Hospital Ship.....	285,696.28
A Battleship (BB).....	27,062.28
An Aircraft Carrier (CV).....	27,799.20
A Heavy Cruiser (CA) .....	19,385.48
A Light Cruiser (CL).....	14,845.03
A Destroyer (DD).....	3,040.92
A Submarine (SS).....	489.67
A Tender (AD) (AV) (AS).....	13,514.55
A Transport (AP) (APA).....	21,512.51
A Squadron of Patrol Torpedo (PT) Boats.....	2,800.00
A Marine Division.....	133,803.04
A Marine Medical Battalion .....	1,671.82
A Marine Medical Company (with hospital facilities).....	12,254.77
A Construction Battalion (SeaBees).....	1,440.00

*K. C. Melhorn*

K. C. MELHORN  
Rear Admiral, M.C., U.S. Navy

*Survey of...*  
SUPPLY ACTIVITIES  
**MEDICAL DEPARTMENT**  
*UNITED STATES NAVY*



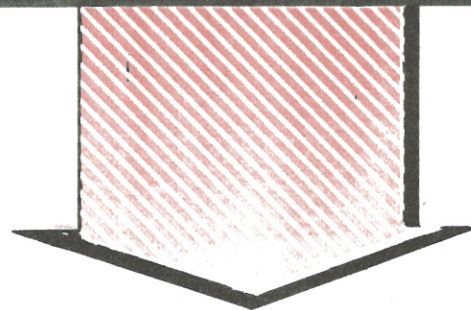




# THE PURPOSE OF THE SURVEY. . .

*To* DETERMINE IF AND HOW OPERATION OF THE SUPPLY  
ACTIVITIES OF THE MEDICAL DEPARTMENT COULD BE  
FACILITATED BY

- A.** REVISION OF ORGANIZATION STRUCTURE
  - 1. DEFINITION OF FUNCTIONS
  - 2. REDISTRIBUTION OF RESPONSIBILITIES
- B.** MODIFICATION OF METHODS AND PROCEDURES





# *The* **SCOPE OF THE SURVEY INCLUDED THESE PRIMARY CLASSES OF FUNCTIONS**

- DETERMINATION OF MATERIAL REQUIREMENTS
- PROCUREMENT
- STORES CONTROL
- WAREHOUSING AND DISTRIBUTION
- FINANCIAL CONTROL





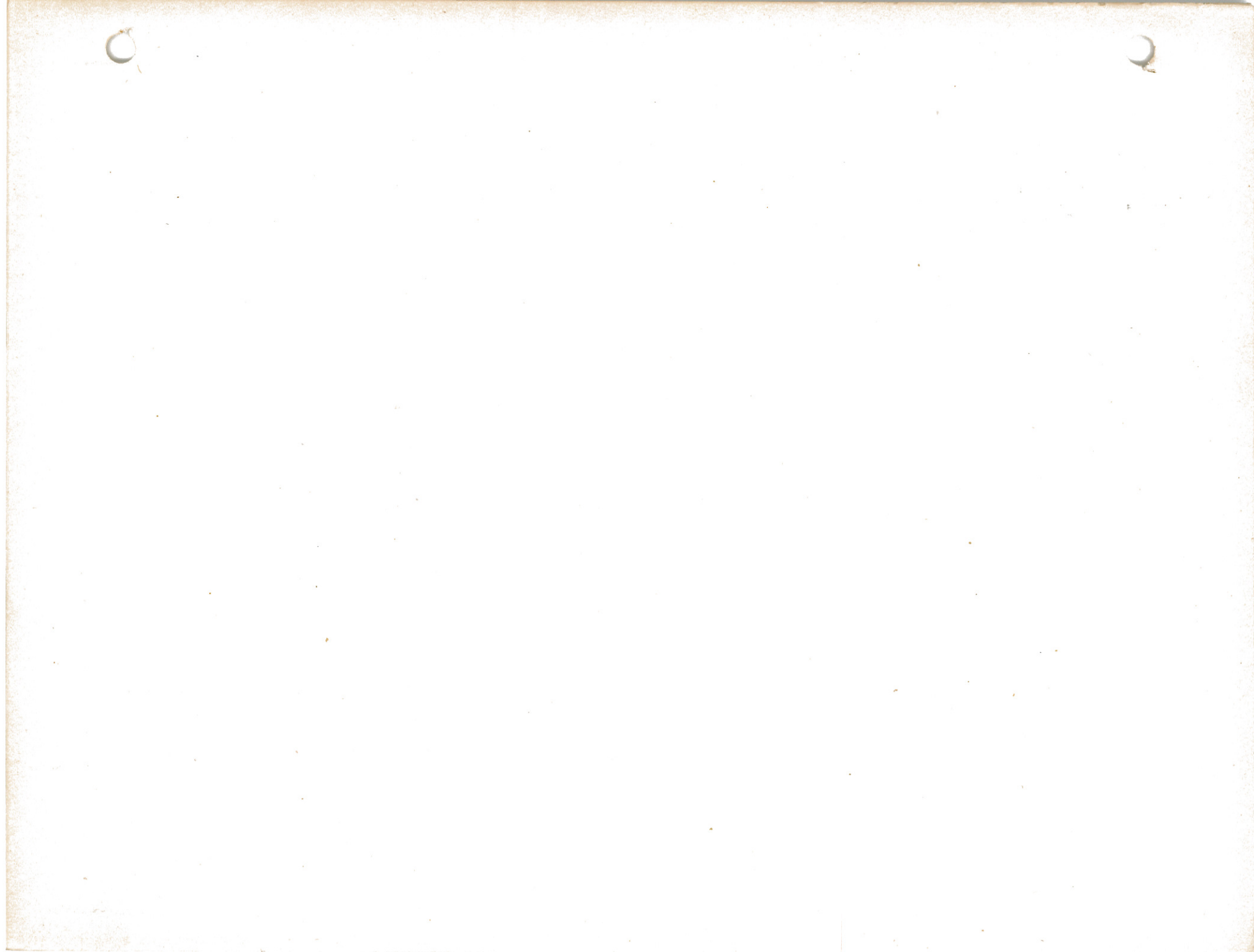
# EXISTING ORGANIZATION STRUCTURE WAS ANALYZED FOR EFFECTIVENESS



CENTRAL CONTROL  
(*The* BUREAU LEVEL)



DECENTRALIZED OPERATIONS  
(*The* DEPOT & STOREHOUSE LEVEL)





# FOURTEEN UNITS ARE INCLUDED IN DEPOT AND STOREHOUSE ORGANIZATION

## NAVAL MEDICAL SUPPLY DEPOTS

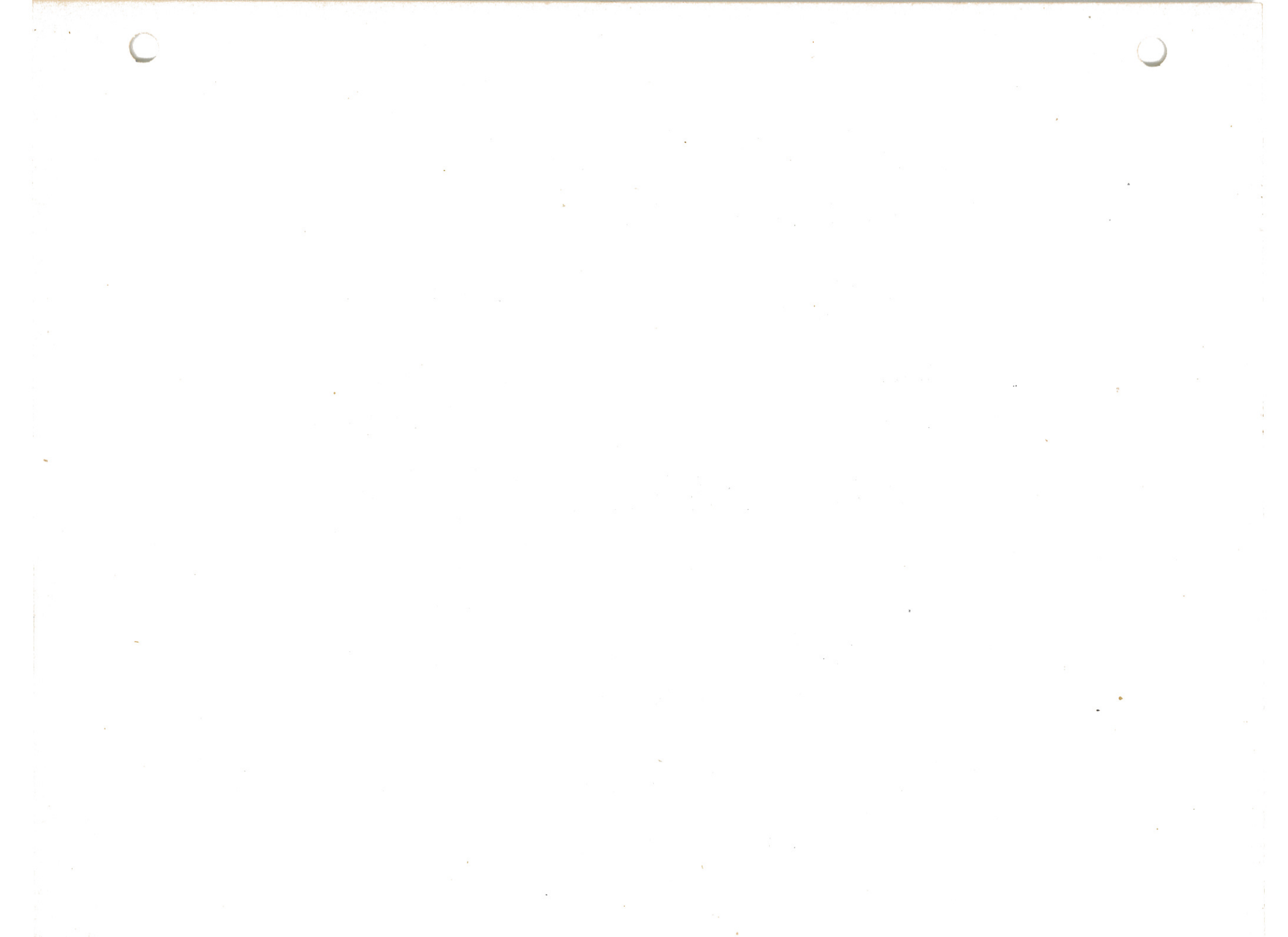
- *BROOKLYN*
- *BALBOA*
- *OAKLAND*
- *PEARL HARBOR*

## NAVAL MEDICAL SUPPLY STOREHOUSES

- *NEWPORT*
- *NORFOLK*
- *CHARLESTON*
- *NEW ORLEANS*
- *SEATTLE*
- *SAN PEDRO*
- *SAN DIEGO*

## MEDICAL SECTIONS, NAVAL SUPPLY DEPOTS

- *MECHANICSBURG*
- *SPOKANE*
- *CLEARFIELD*



# MAJOR DEPOTS HAD BEEN CONCERNED IN BOTH CONTROL AND OPERATIONS

CLASS OF FUNCTIONS..	FUNCTION	FORMER DISTRIBUTION		
		N MSD BROOKLYN	N MSD OAKLAND	OTHER NMSS-NMSD
DETERMINATION OF MATERIAL REQUIREMENTS	Determination of overall requirements	●		
	Authorization of requirements of individual activities	●	●	
	Determination of need for specific purchases	●	●	
	Determination of items to be listed in Supply Catalog	●		
	Equipment of new Medical Department facilities	●		
PROCUREMENT	Development, review and coordination of specifications	●		
	Execution of purchasing detail	●	●	
	Inspection of incoming material	●	●	
STORES CONTROL	Maintenance of unit stores controls	●	●	
	Maintenance of stores location controls	●	●	
WAREHOUSING & DISTRIBUTION	Development of policies and methods for storage of medical stores	●	●	
	Development of policies and methods for assembly and salvage of stores	●	●	
	Development of policies and methods for issue of stores	●	●	
	Development of policies and methods for shipping of stores	●	●	
FINANCIAL CONTROL	Preparation of annual estimates for purchases of medical material and authorization of "Supply Depot" allotments	●	●	
	Accounting of allotment expenditures by Medical Supply Depots for purchases of medical stores	●	●	
	Accounting and auditing of "Supply Depot" allotment expenditures by activities drawing medical stores	●	●	●
	Accounting of receipts and expenditures of medical stores by Medical Supply Depots	●	●	●

CONTROL  
FUNCTIONS

WERE TRANSFERRED  
TO MATERIEL  
DIVISION

STORES CONTROL	Maintenance of unit stock records	●	●	●
	Maintenance of stock location records	●	●	●
WAREHOUSING AND DISTRIBUTION	Storage of medical stores	●	●	●
	Assembly and salvage of stores	●	●	●
	Issue of stores	●	●	●
	Shipping of stores	●	●	●

OPERATIONS  
FUNCTIONS

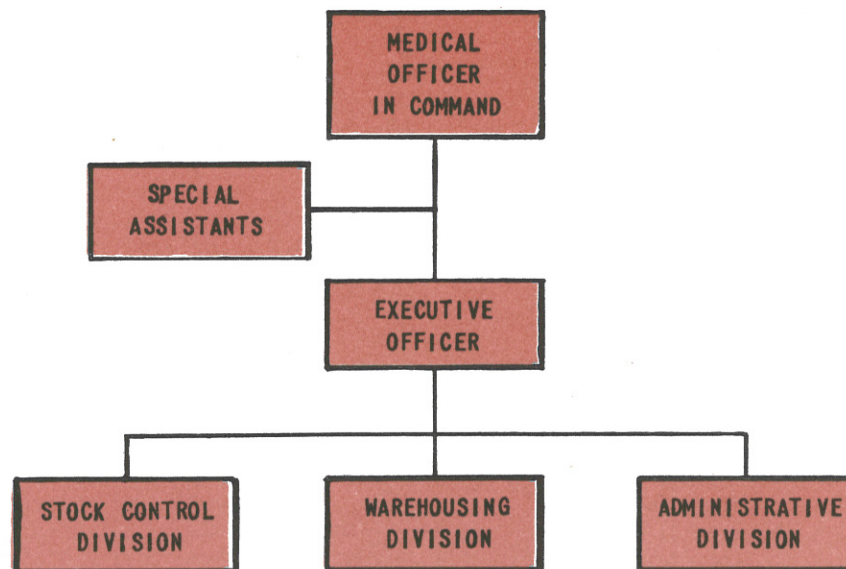
WERE LEFT IN  
DEPOTS & STOREHOUSES



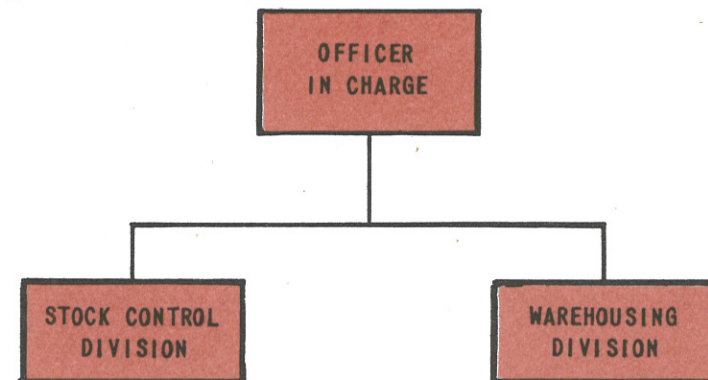


# LIKE ORGANIZATIONS WERE SET UP IN EACH DEPOT AND EACH STOREHOUSE

## TYPICAL DEPOT



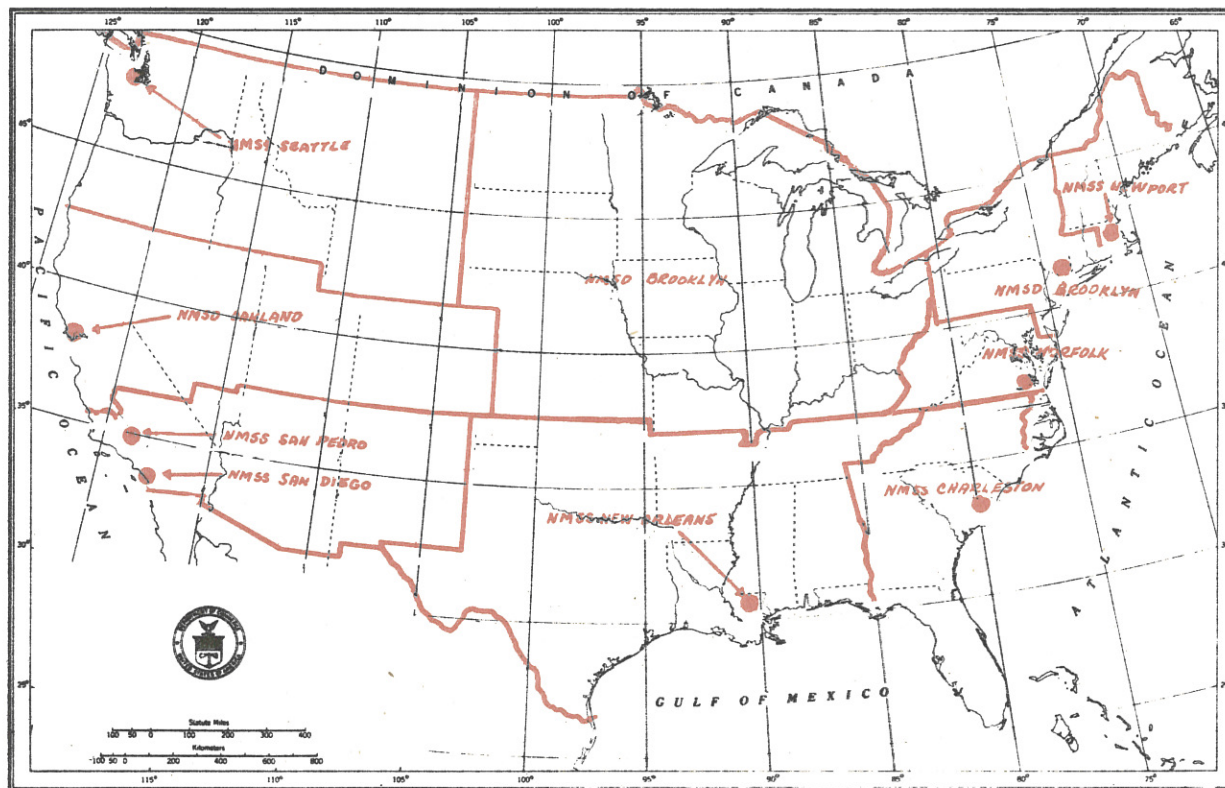
## TYPICAL STOREHOUSE

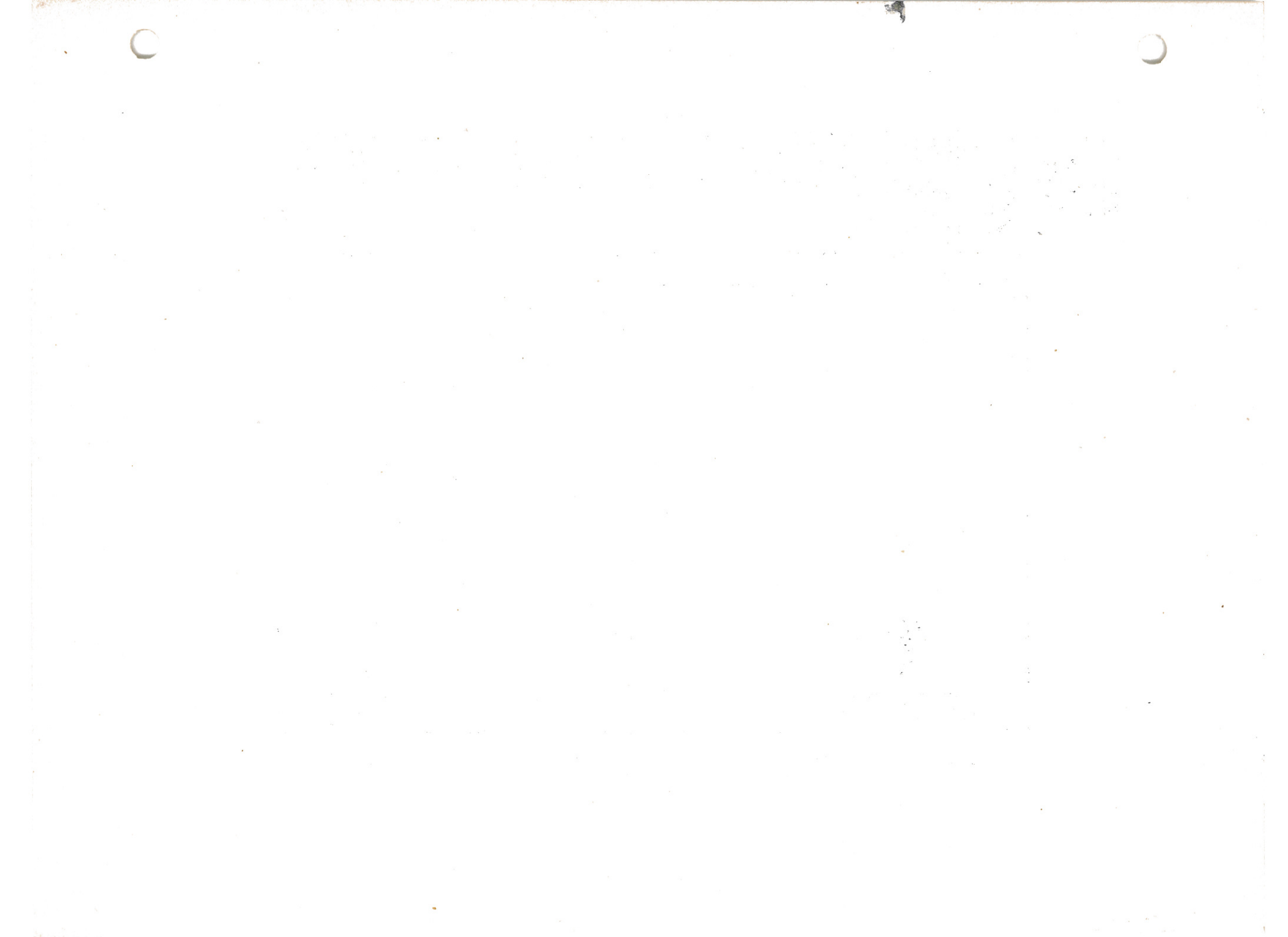






# RAPID STORES DISTRIBUTION POSSIBLE DUE TO DISPERSION OF STOREHOUSES





# MISSIONS OF DEPOTS & STOREHOUSES HAD BEEN ILL-DEFINED, *as to....*

## **A.** ITEMS TO BE STOCKED, resulting in

1. *GENERALLY UNBALANCED STOCKS*
2. *EXCESSIVE STOCKS OF SLOW-MOVING ITEMS AT TIDE-WATER POINTS*
3. *UNNECESSARY REQUISITIONING OF STORES*

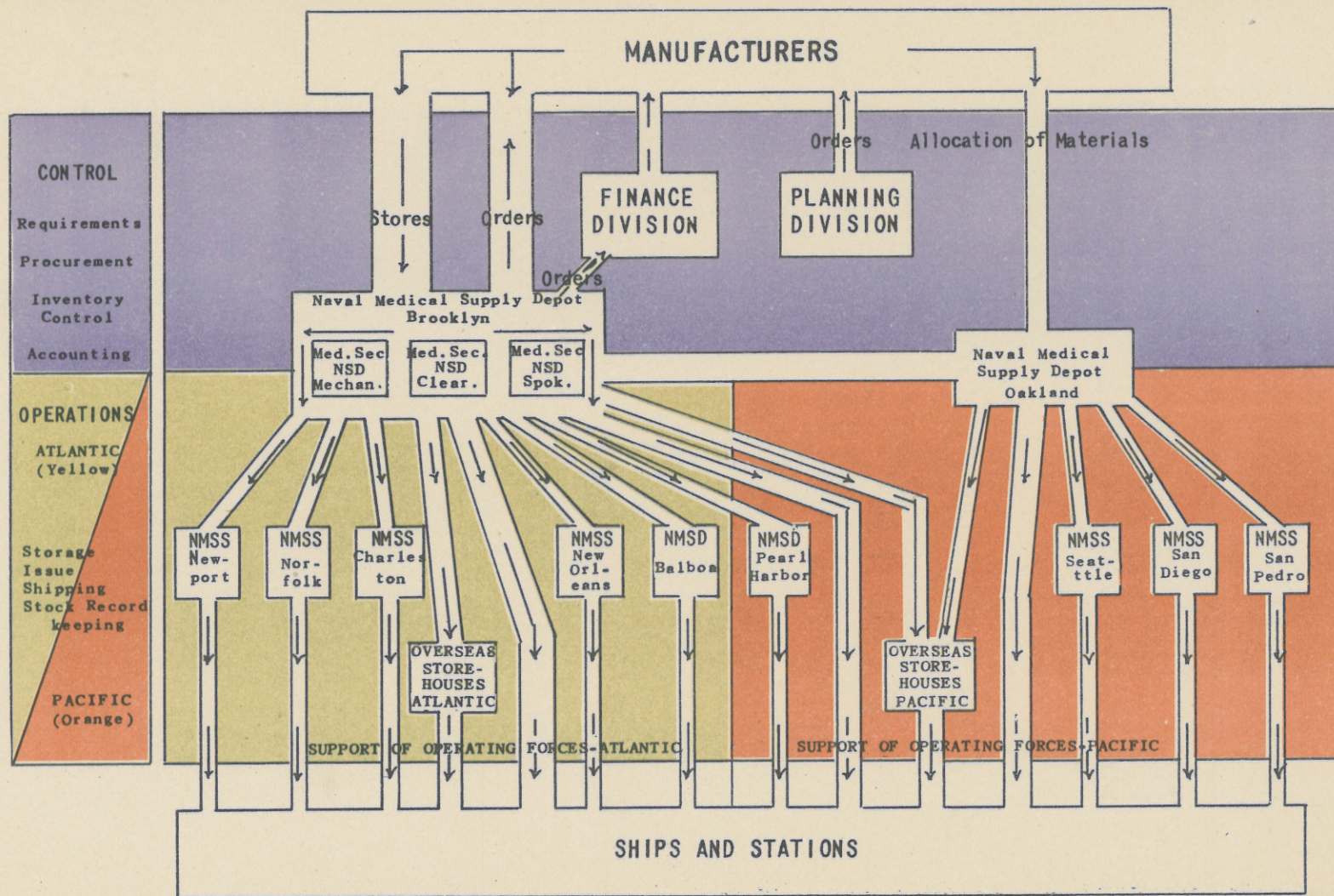
## **B.** ACTIVITIES TO BE SERVED, resulting in

1. *DELAYS IN SHIPMENTS OF STORES*
2. *DOUBLE TRANSIT OF STORES*
3. *POOR DISTRIBUTION OF WORKLOAD AMONG DEPOTS AND STOREHOUSES*





# SUPPORT OF OPERATING FORCES WAS THUS HANDICAPPED





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**AT THE BUREAU LEVEL, EACH FUNCTION WAS  
INVENTORIED AND CLASSIFIED AS SUPPLY,  
PLANNING OR FINANCIAL**

*For* ILLUSTRATIVE PURPOSES

● **RED IS SUPPLY**

● **BLUE IS PLANNING**

● **GREEN IS FINANCE**

**CORRESPONDING ORGANIZATIONS ARE SIMILARLY COLORED...**



# *This* MIXTURE OF FUNCTIONS AND OVERLAPPING OF RESPONSIBILITIES HAD RESULTED IN...

## **A. FAULTY PERFORMANCES OF CERTAIN SUPPLY FUNCTIONS**

Maintenance of unnecessarily large inventories and obligations to purchase

Frequent submission of incomplete and inaccurate reports of requirements

Preparation of unnecessary reports and records

Failure of professional divisions to make any organized contribution to the solution of material problems

Poorly coordinated plans for use of critical supplies and materials

Duplicate and confusing contacts between Medical Department and other bureaus, offices, agencies and the trade

Delay in procurement and shipment of some medical material

Purchase of some material at unnecessarily high prices

Unnecessarily heavy use of transportation facilities and excessive expenses therefor

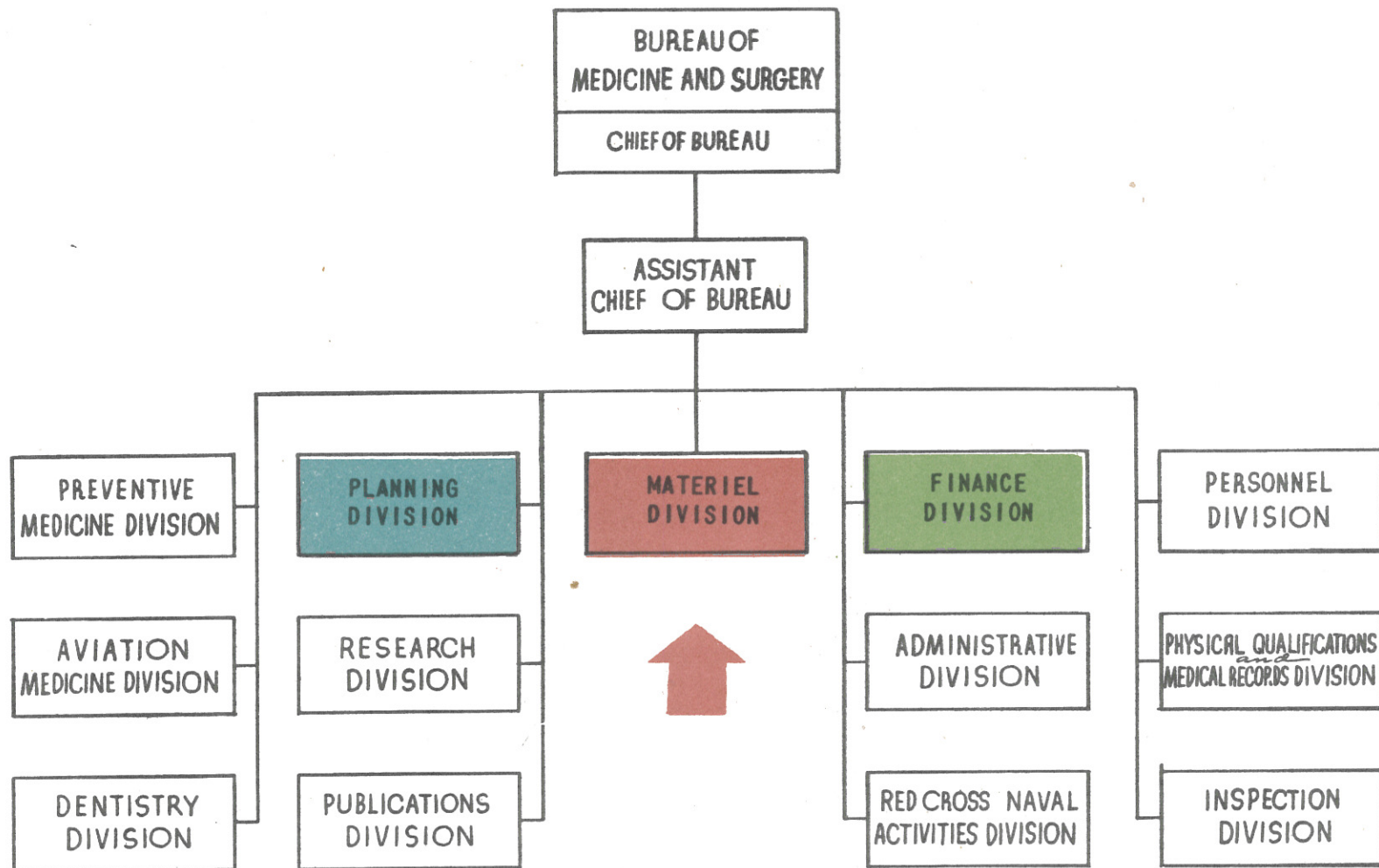
Unnecessary burdening of field activities with paper work

## **B. DISPERSION OF EFFORT WHICH HAD RETARDED PLANNING AND FINANCIAL OPERATIONS**





# *Creation* OF A MATERIEL DIVISION WAS RECOMMENDED AND ADOPTED





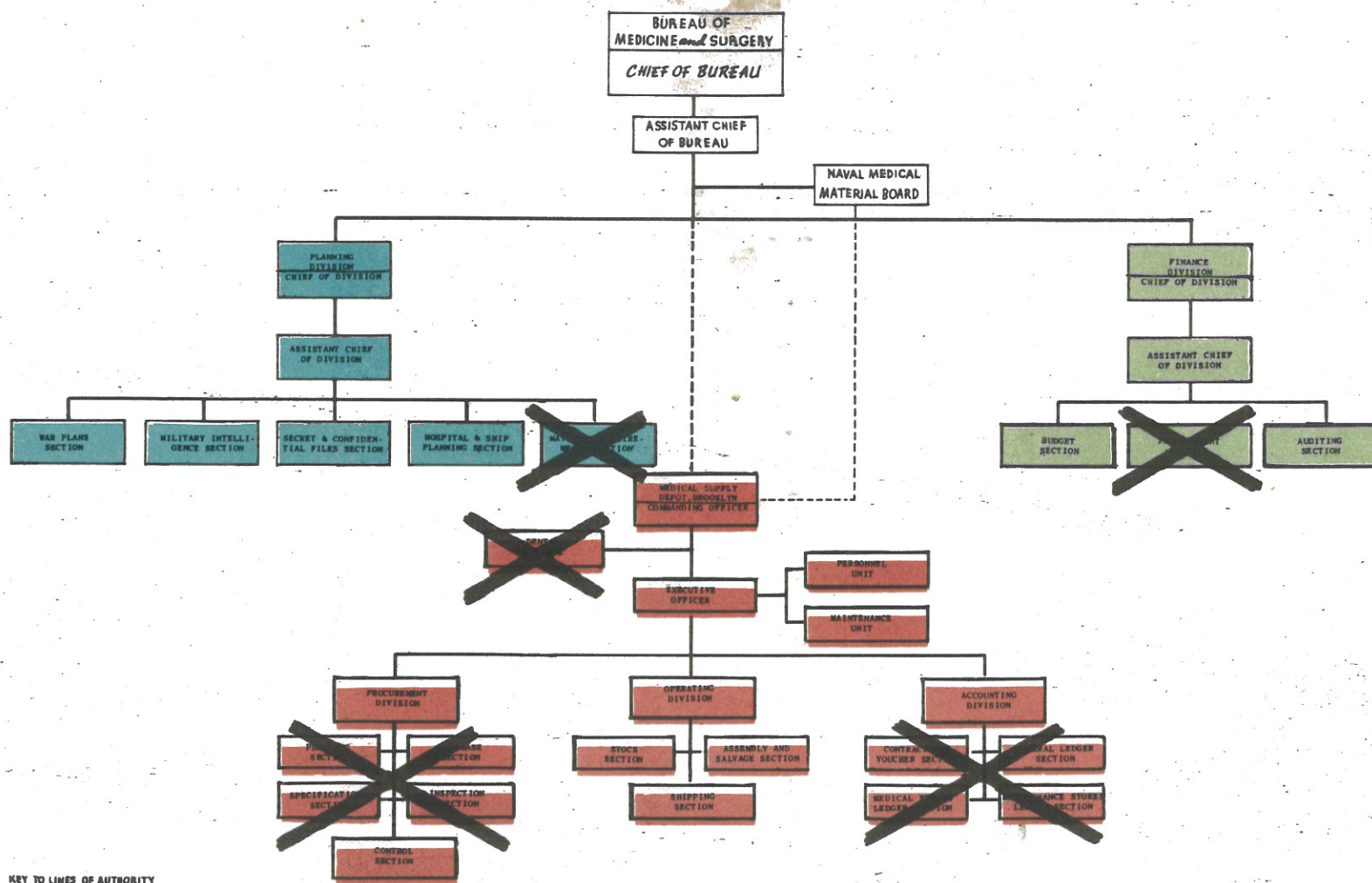


# COMPLETE RESPONSIBILITY FOR EACH FUNCTION WAS ASSIGNED TO THE CORRESPONDING DIVISION OF BUMED

CLASS OF FUNCTIONS	FUNCTION	NEW DISTRIBUTION			FORMER DISTRIBUTION		
		PLANNING DIVISION	FINANCE DIVISION	MATERIAL DIVISION	PLANNING DIVISION	FINANCE DIVISION	MED. SUP DEPOTS
DETERMINATION OF MATERIAL REQUIREMENTS	Securing, evaluating and disseminating of information relative to operating plans	●			●		
	Determination of overall requirements			●	●	●	●
	Authorization of requirements of individual activities			●		●	●
	Determination of need for specific purchases			●		●	●
	Determination of items to be listed in Supply Catalog			●	●		●
	Layout and design of new Medical Department facilities	●			●		
	Equipment of new Medical Department facilities			●	●	●	●
PROCUREMENT	Development, review and coordination of specifications			●	●		●
	Execution of purchasing detail			●	●	●	●
	Inspection of incoming material			●			●
STORES CONTROL	Maintenance of unit stores controls			●			●
	Maintenance of stores location controls			●			●
WAREHOUSING & DISTRIBUTION	Development of policies and methods for storage of medical stores			●			●
	Development of policies and methods for assembly & salvage of stores			●			●
	Development of policies and methods for issue of stores			●			●
	Development of policies and methods for shipping of stores			●			●
FINANCIAL CONTROL	Preparation of total annual Medical Department Budget & authorization of "Medical Department" allotments		●			●	
	Preparation of annual estimates for purchases of medical material and authorization of "Supply Depot" allotments			●		●	●
	Accounting of allotment expenditures by Medical Supply Depots for purchases of medical stores			●			●
	Auditing of allotment expenditures by Medical Supply Depots for purchases of medical stores		●			●	
	Accounting and auditing of "Supply Depot" allotment expenditures by activities drawing medical stores			●		●	●
	Auditing of Medical Department allotment expenditures by activities drawing medical stores		●			●	
	Accounting of receipts and expenditures of medical stores by Medical Supply Depots			●			●
	Auditing of receipts and expenditures of medical stores by Medical Supply Depots		●			●	
	Auditing of receipts and expenditures of Medical Department property by all activities		●			●	

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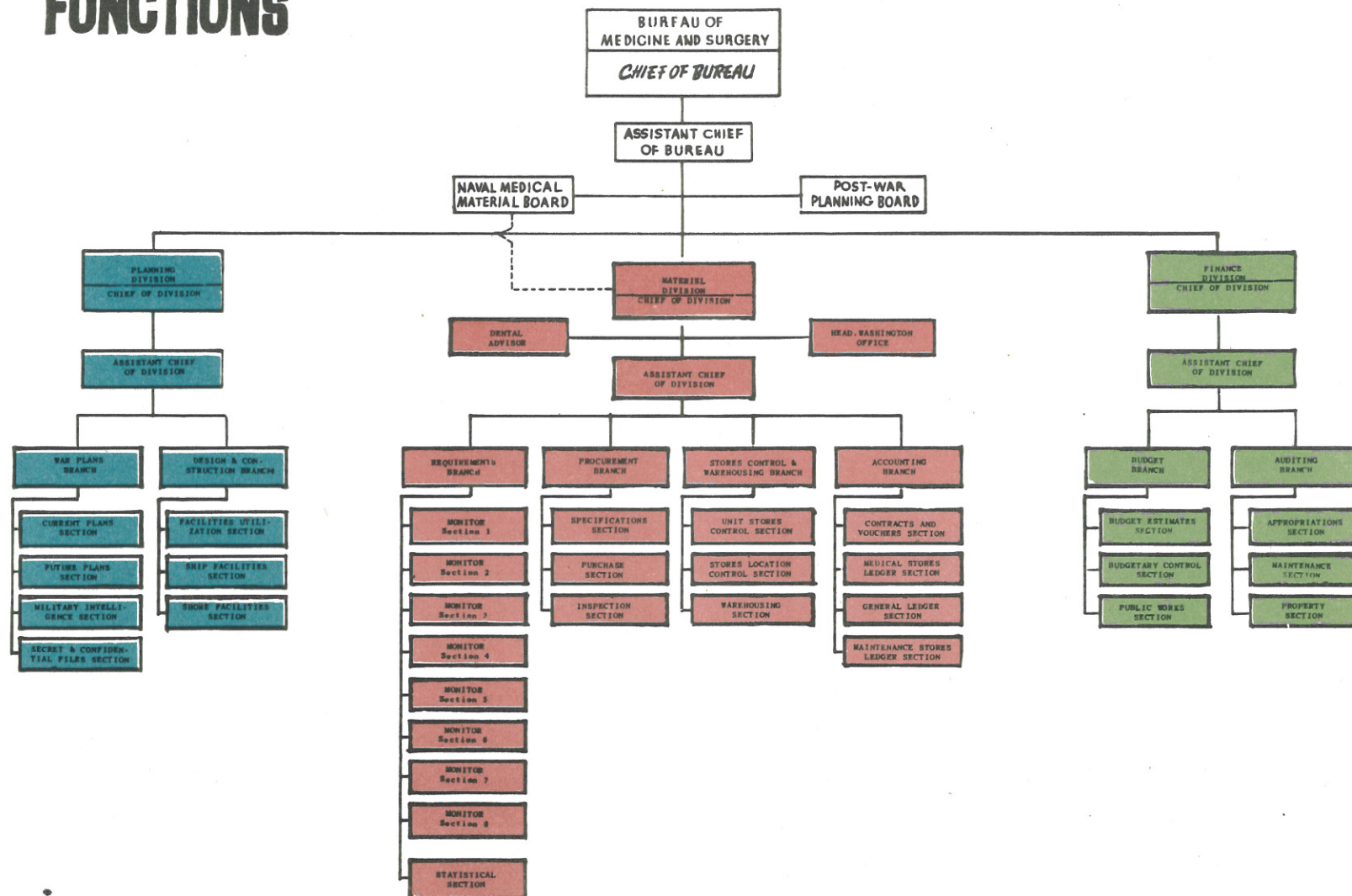
# EXISTING ORGANIZATIONAL STRUCTURE BECAME OBSOLETE







# ORGANIZATION WAS REVISED TO EFFECT NEW DISTRIBUTION OF FUNCTIONS

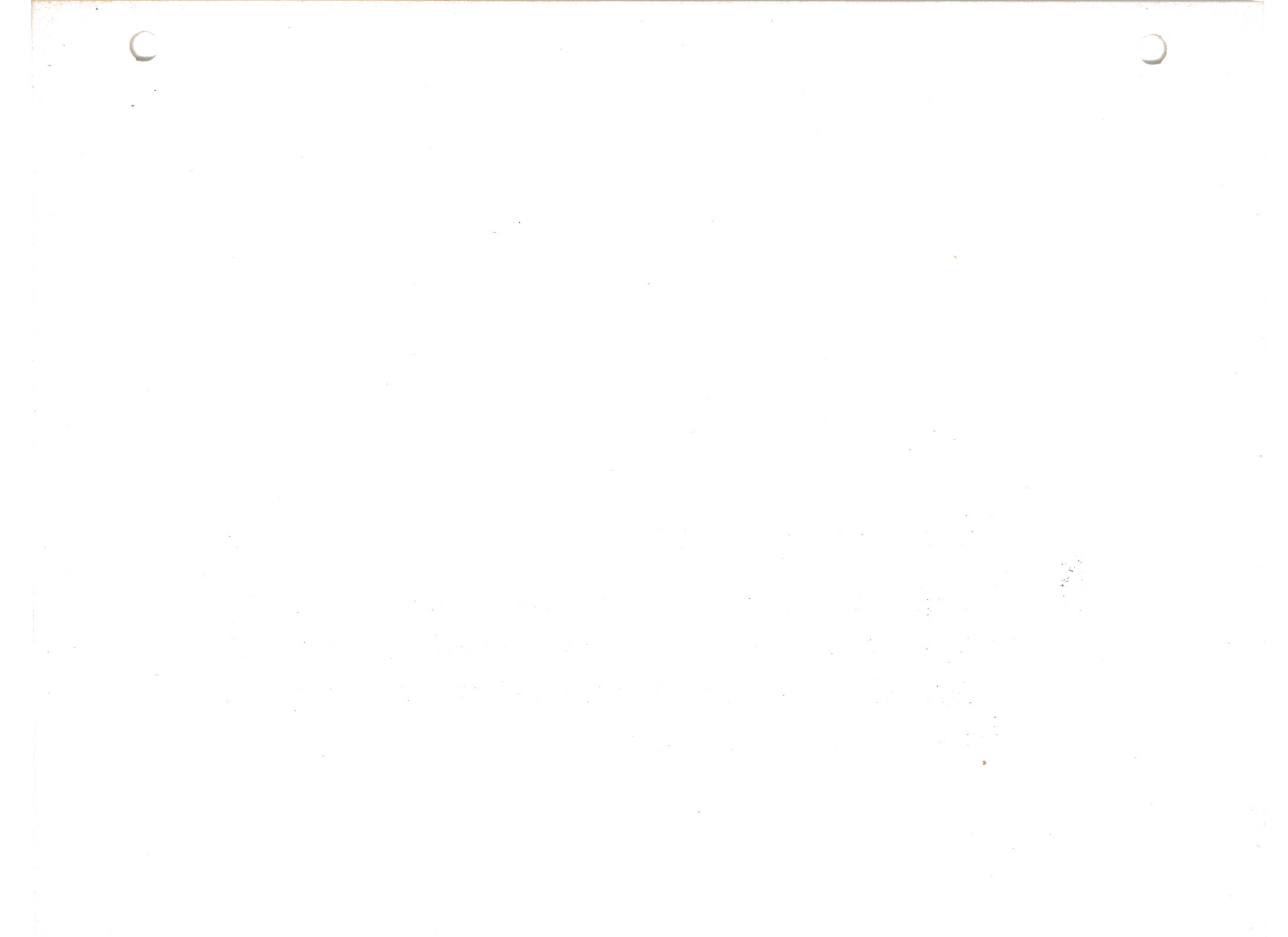






## MATERIEL DIVISION WAS LOCATED AND STAFFED AS FOLLOWS:

- A.** It was located primarily in Brooklyn for duration of war
- B.** The positions of Chief of Division and Medical Officer in Command, N M S D, Brooklyn, were combined
- C.** The Division absorbed all personnel of NMSD, Brooklyn, except Operating Division and Personnel and Maintenance Units
- D.** A Washington Office was established to coordinate work of Division with balance of Bu Med and to represent Division in necessary personal contacts with Chief and Assistant Chief of Bureau and with other divisions, bureaus, offices, and agencies



# SPECIFIC ITEMS OF STORES & AREAS TO BE SERVED WERE ASSIGNED

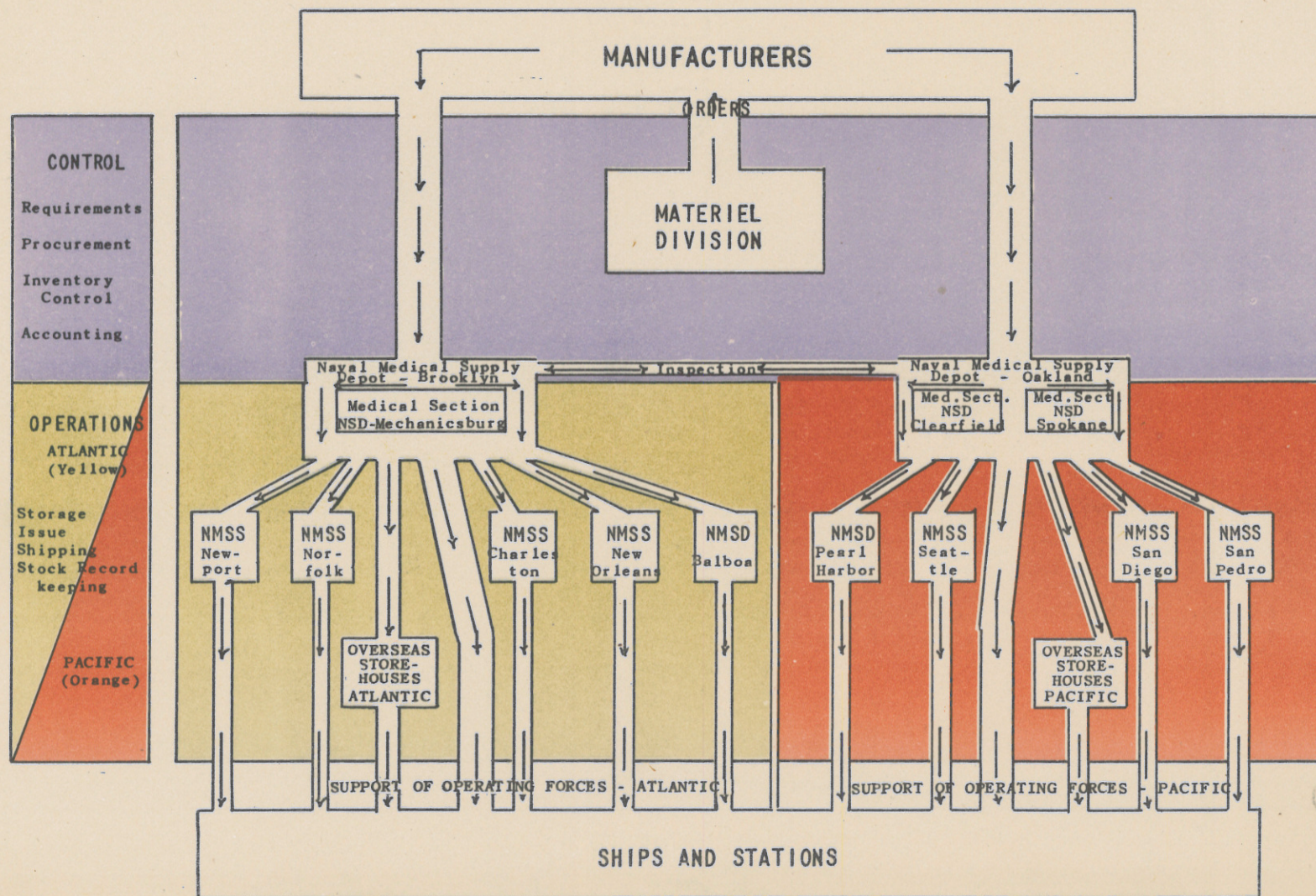
For Activities located in...	TO SHIPS AND SMALL STATIONS...		TO HOSPITALS AND OTHER LARGE STATIONS
	SUPPLIES AND MINOR EQUIPMENT WILL BE FURNISHED BY...	MAJOR EQUIPMENT WILL BE FURNISHED BY...	ALL MEDICAL STORES WILL BE FURNISHED BY...
1st, NAVAL DISTRICT	NMSS Newport	NMSD Brooklyn	NMSD Brooklyn
3rd, " "	NMSD Brooklyn	NMSD Brooklyn	NMSD Brooklyn
4th, " "	NMSD Brooklyn	NMSD Brooklyn	NMSD Brooklyn
5th, " "	NMSS Norfolk	NMSD Brooklyn	NMSD Brooklyn
6th, " "	NMSS Charleston	NMSD Brooklyn	NMSD Brooklyn
7th, " "	NMSS Charleston	NMSD Brooklyn	NMSD Brooklyn
8th, " "	NMSS New Orleans	NMSD Brooklyn	NMSD Brooklyn
9th, " "	NMSD Brooklyn	NMSD Brooklyn	NMSD Brooklyn
11th, " "	NMSS San Diego or San Pedro	NMSD Oakland	NMSD Oakland
12th, " "	NMSD Oakland	NMSD Oakland	NMSD Oakland
13th, " "	NMSS Seattle	NMSD Oakland	NMSD Oakland
14th, " "	NMSD Pearl Harbor	NMSD Pearl Harbor	NMSD Pearl Harbor
15th, " "	NMSD Balboa	NMSD Balboa	NMSD Balboa
Advanced Bases-Atlantic	Numbered Storehouses or NMSD Brooklyn	Numbered Storehouses or NMSD Brooklyn	Numbered Storehouses or NMSD Brooklyn
Advanced Bases-Pacific	Numbered Storehouses or NMSD Oakland	Numbered Storehouses or NMSD Oakland	Numbered Storehouses or NMSD Oakland

*Exception:* Commissioning Outfits normally will be furnished only by NMSD Brooklyn and NMSD Oakland





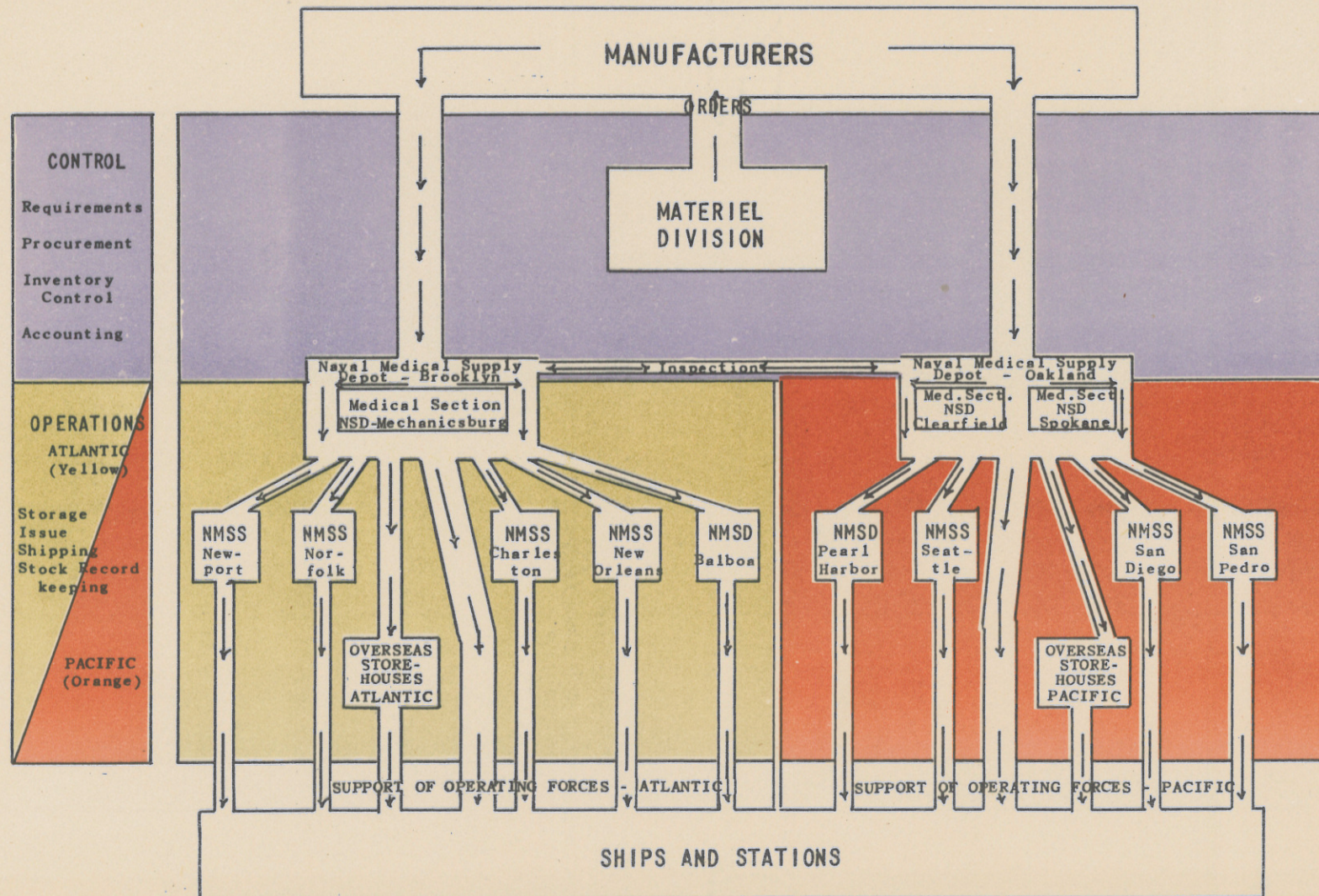
# REVISION OF DISTRIBUTION SYSTEM STRENGTHENED SUPPORT OF OPERATING FORCES







# REVISION OF DISTRIBUTION SYSTEM STRENGTHENED SUPPORT OF OPERATING FORCES







# ORGANIZATION CHANGES POINTED WAY TO MANY PROCEDURAL MODIFICATIONS

- A.** Introduction of a reporting system for gathering monthly data on receipts, issues and inventories of all medical materiel.
- B.** Modification of requirements reporting to increase frequency of review of programs, to place greater emphasis on fast-moving items, and to eliminate reporting of unimportant data.
- C.** Modification of inventory controls to provide better-balanced stocks and to concentrate attention on major distributing points.
- D.** Conversion of available dollar statistics from purely financial use to assist in requirements planning through projection of trends in issues and stock positions.
- E.** Simplification of accounting for medical stores through elimination of Supply Depot allotments and adoption of uniform annual prices.
- F.** Substitution of direct for indirect routing of medical stores requisitions.



